

# Municipal Journal

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No. 13



FRESNO, CAL., PUBLIC MARKET.

## FRESNO'S MUNICIPAL MARKET

**Street Market Without Special Buildings Which Has Resulted in Reducing Prices from One-fourth to One-half.—Operated Three Mornings a Week.—Small License Fee Charged.—Well Patronized.**

A municipal market as a possible method of reducing the cost of living has been tried in Fresno, Cal., within the past few months, and this without any great expense on the part of the city in the construction of buildings, but simply by an endeavor on the part of the mayor to bring the consumer and the producer together in the simplest way possible. In a letter Mayor Snow of Fresno described what was done, this letter reading in part as follows: "The market was started on the edge of a public square without any preparation whatever. I simply asked the papers to invite the people from the country to bring whatever they happened to have to sell. This was about the first of October (1912). The first day a few people came, many to look on. Next market day a greater number were on hand, and after that a double row of wagons and stalls were on the

market for the length of two blocks. During the holidays this was augmented by a single row for the length of one block around the city square.

"We have had considerable opposition from the Merchants' Association, and a good many members, while not publicly declaring against it, are taking every opportunity to excite discord and arouse dissatisfaction. They are not having very much success, however.

"For a month or two we allowed everybody, whether they were producers or not, to come upon the market without any license or fee whatever. We cleaned the space they occupied before they arrived.

"The market days are three a week—Tuesdays, Thursdays and Saturdays. On the first named days the market is open until one, and on Saturdays until 2 p. m. After we had established the fact that it was a success,

we passed an ordinance regulating it to a certain extent and charging a small fee, which we termed a license.

"The actual producer we charged 10 cents per day, and for those other than producers the following schedule is charged: For selling meats, \$5.00 a month; live and dressed fowl, \$2.50 a month; fish, \$2.50 a month; bakery products, \$2.50; the same for confectionery, vegetables and lunch counter. Five dollars a month is charged for selling potatoes or apples by the sack or box, while the restaurant license is double that of the lunch counter. Peddlers and demonstrators of "notions," etc., are charged \$2.50 a month.

"The prices of articles sold upon the market have been substantially reduced; meats, for instance, from one-fourth to one-half. The market has been a wonderful success, especially taking into consideration the fact that the ranchers about Fresno have never raised anything for a market of this kind. They have raised things to be sold in quantities, for exporting rather than local consumption. Now that they see the advantage of this system they are going to make a business of raising products for the home market. Heretofore if they have had anything to sell to local dealers they would bring it in and take whatever the merchants were inclined to give, and there was absolutely no competition among dealers for buying the local products. Now the rancher sells his own produce upon the market, receives much more for it than he would from the dealers, and the consumer gets a fresh article at a much lower price.

"From one to three thousand customers are buying at the public market when it is doing business, and every kind of a commodity 'from a mince pie to a new-fangled ironing board' is for sale, including, of course, fresh and choice farm products. The food offered for sale is inspected by the city health officer, and the sanitary inspector is present to see that everything is kept clean."

One of the photographs shown herewith is of a city

market in another and larger California city, Los Angeles. This market is for the benefit of wholesale dealers and retailers or hucksters, and not for retail purchases by citizens. A movement, however, is on foot to follow the example of Fresno and establish in various parts of Los Angeles markets where consumers and growers can trade directly with each other.

## FOOD SCREENING LEGISLATION

### Review of That Enacted by Various Cities Throughout the Country.—General and Specific Ordinances and Board of Health Rules.

By A. LINN BOSTWICK, Librarian Municipal Reference Branch, St. Louis Library.

In these days of stringent health legislation, by Federal, state and municipal authorities, there has been a steadily growing tendency to provide for the protection of certain classes of food products in stores from contamination by dust, dirt, insects and animals. So large a number of municipalities have adopted regulations of this sort that an exhaustive study of them would fill a volume. It is our purpose here merely to review the general scope and trend of this class of legislation as it exists.

In perhaps the majority of cases food screening legislation has taken the form of a provision, in some ordinance or health board rule, stating that certain fruits and food stuffs must be protected from flies, dust, dirt, etc. Other regulations are more specific, some few going so far as to specify wire screens of a stated mesh. Some municipalities have regulated only one class of stores, such as bakeries or markets, but the usual practice is to include all establishments that deal in food intended for human consumption.



CITY MARKET IN LOS ANGELES.



As to the authority making and enforcing food screening regulations, a dozen or so random cases show about an equal number of city ordinances and Board of Health rules. This of course is a matter depending upon the powers which health boards have in different municipalities.

Taking first some examples of the less explicit regulations, we find that in Cleveland and Toledo the Board of Health provides for the protection, by coverings, of various food products from dust, dirt, flies, etc. In both cases the Board of Health has adopted a resolution to this effect. Washington, D. C., in its public health laws, requires stores and markets to be screened in such a way that food will at all times be kept free from flies and insects. In Sacramento, Cal., an ordinance relating to foodstuffs in general provides that candies, shelled nuts and certain fruits be enclosed so as to be protected from dust and dirt.

Considering now some of those cities that have enacted more definite legislation, we find a good example of a brief food screening rule in the city of Flint, Mich. It is not as definite as it might be, but is good in that it deals directly with the outdoor display of food. The Board of Health has made a regulation providing that "all food exposed for display outside of screened rooms must be screened. This applies more particularly to the exposure of fruits, etc., outside of stores."

In an ordinance adopted in Pittsburgh in 1910 we find the following: "Section 4. No person or persons, firm or corporation, shall display any fruits or vegetables on pavements, unless the same are properly covered or screened in cases free from dust, flies or other insects. Section 5. Dried fruits offered or exposed for sale in the city must be kept closely covered and free from the pollution of dust, flies and other insects." Special provision is also made for the protection of cut fruits and melons.

The ordinance adopted some years ago in San Francisco is most definite. In the first place all stores in which foodstuffs are sold must, between 9 a. m. and 6 p. m., have all doors, windows and other openings protected by finely woven wire mesh screens, and all foodstuffs, etc., must be kept inside the store. Street stands of every description are dealt with in other sections of the ordinance, as follows: "Food, candy and other edibles" must be enclosed in tight glass cases, but it is further provided that fruit and vegetables be protected by "tight glass cases or finely woven wire mesh screens, mosquito netting, or other dirt, dust and fly-proof covering, so placed over and about said fruit or vegetables as not to touch the same at any point." Exception is made, as is usual, of fruits and vegetables that are peeled before eating.

Kansas City, Mo., has an ordinance requiring the protection of foodstuffs, except during December, January or February, with either glass or wire screening not coarser than No. 12 standard wire mesh, in such a manner that the covering shall not touch the foodstuff. Unbroken packages and certain fruits and vegetables are exempted. A report from Kansas City states that the ordinance is too severe to be properly enforced.

Seattle provides by city ordinance that "fruits which are generally or frequently eaten in the raw condition, when offered for sale in broken packages, shall at all times be so protected by screens or netting or otherwise as to exclude dust, flies or other insects."

Wilmington, N. C., has an ordinance compelling food screening between April 1 and November 1 of each year, with the usual exceptions; Augusta, Georgia, through its Board of Health, provides for the protection of fruits by wire screening during certain months; Chelsea, Mass.,

has a Board of Health rule for the covering of certain food stuffs and fruits when placed outside on display.

In St. Louis an ordinance has been adopted which provides for the screening of foodstuffs, etc., so as to protect them from flying insects, between May 1 and Oct. 31. An attempt is now being made to amend this in such a way that commission houses will be exempted. Considerable pressure has been brought to bear on both sides, and the amendatory ordinance is pending in the Municipal Assembly.

#### NEW INTAKE TOWER FOR ST. LOUIS.

Contemplated improvements to the St. Louis water supply were briefly outlined in our issue of January 2. The Board of Public Improvements has approved the plans for the new intake tower to be erected in the Mississippi River 650 feet east and 150 feet north of the existing tower. Bills have been introduced in the municipal assembly authorizing the erection of the tower, the revetment of a part of the Illinois bank of the river opposite the tower, and the installation of mechanical filters at Chain of Rocks.

Water Commissioner Wall, in a general description of the tower, which is to rise 90 feet above the river, states that the Roman style of architecture has been adopted by the architects as being most fitted for municipal work, following the precedent set by the new public library and the new "Four Courts," as well as by monumental municipal buildings erected during the past ten years in New York, London and Paris. It is to be built in the most substantial manner. The lower portion is of concrete faced with granite, the upper portion of tooled Bedford limestone with heavy rustication around the windows and doors. Inside of the tower will be located pumps and engines for operating the apparatus which will control the admission of water to the tunnel. The second floor will be arranged for housing the extra men needed to combat the ice floes in winter, while the third floor will be the living quarters for the tower keeper. The tower will be supplied with every known device for handling ice or taking in water when the river is at its lowest ebb. The architects are Roth & Study, of St. Louis.

The intake tower, including the tunnel, is estimated to cost about \$450,000, of which the superstructure will cost about \$40,000. All of the improvements referred to and asked for in the bills to the municipal assembly are estimated to total \$1,200,000.



NEW INTAKE TOWER, CHAIN OF ROCKS.

# **BROOKLYN'S CITY TRAFFIC CENSUS\***

**Forms Used by Observers.—Expressing Density in Standard Form by Use of Traffic Coefficients.**

—Weights of Vehicles.

It is believed that the Bureau of Highways, Borough of Brooklyn, was one of the first to establish a formal, permanent, vehicular, city traffic census. This census was begun about February, 1911, and continued for about two months; but in June, 1912, it was permanently established as a part of the regular work of the bureau, and has been continued down to date.

The census is taken by the enumeration of all vehicles passing a given point in both directions. The forms used have been adapted from those proposed by the American Society of Civil Engineers and that used by the Rhode Island State Board of Roads. Both of these forms were intended mainly for country road censuses, but contain the general classifications most needed in all vehicular traffic records. The primary objects of our Brooklyn census are to obtain an authoritative knowledge of the density and tonnage of all vehicular traffic. From this knowledge it is expected to determine, at least as far as that traffic may, the solution of problems of widening or extension of, and the character of pavements of the streets of the city.

Form one, for field use, one sheet for each direction of flow of traffic, is printed and bound in pads of fifty with card-board back, which make very good scoreboards for

the street, and there are vehicles drawn up to the curb on each side, it is very easy to find a congested street. By the adoption of the system of traffic units as used by the London Traffic Branch, as a measure of traffic density, said unit being a coefficient having relation to the size, speed and flexibility of vehicles, much the closest approximation on paper can be made to the actual conditions on the street.

Applying such traffic units to different traffic divisions of form one, we get the coefficients:

Large auto trucks .....	5	Trucks, loaded .....	10
Small auto trucks .....	2	Trucks, empty .....	7
Automobiles .....	1	Wagons, loaded .....	7
Carriages .....	2	Wagons, empty .....	4
		Street cars .....	10

These coefficients, used in the study and summaries of traffic records, give a totally different conception of the traffic volume than the mere numbers of vehicles. Traffic units thus applied can be used anywhere, on all classes of pavements, thus tending toward a uniformity of standards which alone can be of value in the comparisons of results on different streets, on different styles of pavements and those obtained in different cities.

The tonnage used for each class of vehicles is as follows:

Rubber-Tired Vehicles.		Iron-Tired Vehicles.	
	Tons.		Tons.
Large auto trucks, loaded.	9	Trucks, loaded .....	7½
Large auto trucks, empty.	4	Trucks, empty .....	3½
Small auto trucks, loaded.	3	Wagons, loaded .....	2½
Small auto trucks, empty.	1½	Wagons, empty .....	1½
Automobiles .....	1¼	Carriages .....	1
Wagons and carriages ...	2		

These weights were arrived at only after an extensive

Traffic Observed on		Observed by		Between		Traffic Bound		and		Direction		Hourly Totals	Street-Cars
Date													
Time	Rubber Tired Vehicles				Automobiles	Wagons & Carriages	Iron-Tired Vehicles						
	Auto Trucks						Trucks		Wagons		Carriages		
	Large Loaded	Small Empty	Large Loaded	Small Empty			Loaded	Empty	Loaded	Empty			
AM 8 to 9													
4 to 5													
Total Number													
Total Weight													

Weather

Pavement

FORM NUMBER ONE. 8 INCHES BY 13 INCHES.

observers. These records are returned to the office each day, where the totals for hours, day, class and tonnage are made up. These totals are summarized on form two, for daily or weekly reports. Form one provides for all ordinary street traffic, and makes reasonable provision for separating it into its elements for analysis. Most column heads are self-explanatory. Under trucks are included all iron-tired vehicles, driving two or more horses; and under wagons, those driving one horse. Practically every point thus far observed shows at least a few of each class of vehicles in the returns.

The density of traffic being directly affected by the width of roadway, the first analysis of traffic returns is expressed in number of vehicles per foot of roadway width per hour or per minute. In congested streets the results are also computed for number per line of traffic per minute, taking eight feet as the mean width per line. For a 36-foot roadway there can be ordinarily but four lines of traffic, and when two of those lines are of street-cars on tracks symmetrically laid as to the center line of

\*From paper presented at the Cleveland Meeting of Section D, of the American Association for the Advancement of Science by W. H. Messenger, assistant engineer, Bureau of Highways, Borough of Brooklyn, N. Y.

Traffic Observation on				
Between		and		
Pavement	From	191 to	191	
Roadway		Total Observation	Hours	
R.R.				
Kind of Vehicle	Total Number	Total Weight	Av. No Per Hour	Remarks
Large Auto Trucks Loaded				
" " " Empty				
Small " " Loaded				
" " " Empty				
Automobiles				
Wagons & Carriages				
Trucks Loaded				
" " Empty				
Wagons Loaded				
" " Empty				
Carriages				
Totals				
Street-Cars				

FORM 2. 8 IN. x 8 IN.

inquiry among many business and industrial houses which seemed to be among the largest users of the streets. Auto-truck manufacturers and horse-dealers were, of course, included in this inquiry. One manufacturer reported it not unusual to ship a 22-ton anvil on a three-horse truck, while dry-goods concerns are said to send out



about one ton net per two-horse truck. This diversity in weight shows the constant conflict between the desire to enlarge the number of traffic divisions and the necessity of keeping that number within reasonable limits for the efficient execution of the work.

In many streets of the city, from 70 to 90 per cent. of the traffic moves at a rate of speed of four to six miles per hour. In others and on parkways the rate averages from ten to fifteen miles per hour. On the streets of the former character vehicles are very largely iron-tired and horse-drawn, and in these cases, at least, speed can have little to do with the durability of pavements.

Observations have been taken at some 400 different points, mostly in duplicate since work began. These points are spread out in different sections of the city, being close together in the business and industrial sections and the reverse in the outskirts. A large number of new records were required for the uses of the city planning committee, together with duplicate records at the points of the 1911 observations. Others have been taken on all streets now paved with Belgian or cobble on sand foundation, of which there are a very few miles left in Brooklyn. Still other records have been completed or are in progress upon streets which are to be repaved during 1913, including a number of railroad streets now paved with granite on a sand foundation.

Two observations separated by a period of 15 days have in general been taken at each point. Records as a usual thing have been eight hours long, from 8 A. M. to 12 M. and 1 P. M. to 5 P. M., the traffic squad working six days a week, rain or shine. A few 24-hour and Sunday records have been taken, and it is hoped in the future to take such records regularly, say two or three per year, on streets typical of the different classes of traffic to be found, so as to arrive at the total tonnage per day, week, month and year. The last, summarized for the life of a pavement which has become worn out, gives the traffic durability. This figure is best expressed as a total life of tons (of 2,000 lbs.) per foot of width of roadway.

The traffic squad is made up of six men, five observers and a relief. These men are selected laborers, and with a little training have become quite efficient. Just previous to make-up of assignments, an inspection of the streets at the points of observation is made for construction or other temporary obstacles to the normal flow of traffic. These assignments are made in groups of five for about one week in advance and given to the relief, who distributes them from day to day. The accuracy of the observations is frequently checked for one-hour periods by an independent observer sent out from the office. The squad and its work is inspected at least once each day, when reports are collected. Where traffic is dense, two observers are placed at each point, but frequently one man takes count in both directions.

Reports are made weekly, consisting of summaries, maximum and average traffic per hour and per minute, per line of traffic per minute, and per foot of roadway per minute. Special reports are made from time to time when required, showing the average and maximum density of traffic on a given street from end to end or a portion of the same. These reports also contain analyses of average per cent in number and tonnage of iron-tired and rubber-tired traffic. These data are plotted. When records have been taken on a considerable length of a street at points rather regularly placed, these plots are connected, thus assuming, for the purpose of the design of a new pavement, that traffic is uniform between observation points. This assumption holds good in many cases, but would be entirely wrong in others. Careful inspection only can make it a safe one.

Each year's results are to be plotted on a map of the

city with colors to show three grades of density: light, medium and heavy. These maps are to be used for many comparisons, so that the densities used will be that of number of vehicles or of traffic units per foot of roadway width per minute. As fast as streets upon which records have been taken have been repaved, new records are to be begun, thus furnishing an interesting comparison between results on the old and the new improved pavement.

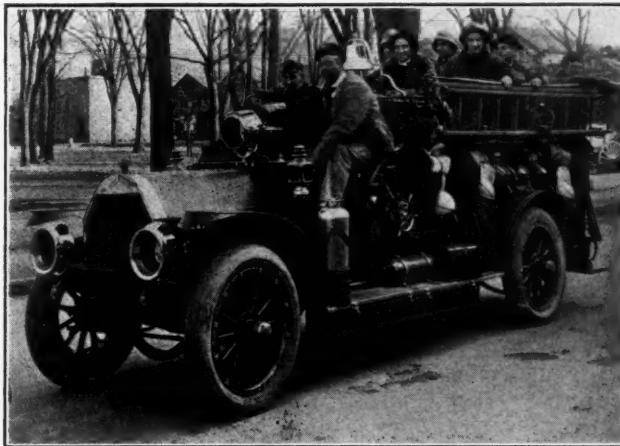
This traffic census was originated by H. H. Schmidt, chief engineer of the Bureau of Highways, Brooklyn, who placed it under the charge of the writer. The writer is indebted to F. Van Zandt Lane, Bureau of Highways, Manhattan, for suggestions, and to Prof. Arthur H. Blanchard, consulting engineer, Columbia University, for very generous assistance in the study of the subject.

### MOTOR FIRE APPARATUS IN MANCHESTER.

By CHARLES F. BOWEN.

The city of Manchester, N. H., put into commission on October 1, 1910, a combination chemical and hose wagon which cost \$5,500. This was a 60-horse-power Knox machine weighing 7,750 pounds unloaded, and approximately 9,000 pounds when carrying men and equipment. The machine regularly carries 750 feet of 2½-inch water hose, 250 feet of ¾-inch canvas rubber chemical hose, one 35-gallon chemical tank, two 6-gallon chemical tanks, one 10 and one 20-foot ladder, the latter being an extension ladder; also the regular equipment of bars, plaster hooks, axes, etc.

The company consists of a captain, lieutenant and six hose men and is the only permanent one in the city. There are two chauffeurs, one of whom drives to still alarms and the other to bell alarms; but every man in the company does more or less of the driving and one of the chauffeurs is changed every three or four months in order to carry out this idea. The wagon carries three signals—the regulation automobile horn, a fire bell with rope pull back of the driver's seat, and a siren whistle. The last named is not permitted on other vehicles and is effective in clearing the streets through the busiest section of the city. As this is the first piece of fire apparatus to reach a fire and is the only one which answers every alarm, the helmets of the chief and members of the board of fire engineers are carried upon it. It is known as "Flying Squadron A."



FLYING SQUADRON A.

To indicate the extent of the service of this machine in a city like Manchester, with a population of over 70,000, the monthly running list is given herewith:

1910—Oct., 47; Nov., 21; Dec., 35.

1911—Jan., 41; Feb., 22; Mar., 25; Apr., 51; May, 36; June, 13; July, 39; Aug., 11; Sept., 20; Oct., 19; Nov., 16; Dec., 28.

1912—Jan., 62; Feb., 34; Mar., 31; Apr., 35; May, 37; June, 47; July, 34; Aug., 17; Sept., 13; Oct., 23; Nov., 22; Dec., 25.

It will be seen that the machine has been kept busy in the winter time, but not so busy in summer. As a matter of fact, however, in the late summer a squad is continually out on brush and grass fires, sometimes starting out early in the morning and staying until late at night, all of which would be recorded simply as one run.

Up to date the machine has made 1,000 runs, covering nearly 3,200 miles. It has never failed to complete a run to a fire or to be able to start out when in commission. The territory covered is about 15 miles square and the roads may be conservatively described as dreadful. It has been driven through swamps in the country districts, over smoking tracks of hilly ground to get at brush fires, through woods and narrow rural lanes and cluttered back streets as well as the wide and smooth business thoroughfares. It has been driven wherever there was room to get it through without doing much damage to property, and its ability to run right up to the fire and get there promptly has been of the greatest advantage and has created public confidence in the work of this squad. It is estimated that the squad, during the two years and a few months, has performed work which a similar piece of apparatus horse-drawn would ordinarily require fifteen years for.

During this time two jack shafts have been broken, both as the machine was trying to start out of heavy sand into which its wheels had sunk. Once a cylinder went dry through fault of a local adjuster. Tires have had to be changed before returning from a fire on two occasions, and six new tires have been purchased since the machine went into commission. The machine has been temporarily out of commission three times to permit of overhauling the motor, each requiring one day; twice for repairing the jack shaft, each time requiring four days; once for three days while repairs were being made to the cylinder. While it is out of commission or when an alarm comes in while the auto is out answering another, a two-horse chemical engine, equipped with two 60-gallon tanks, does this squad's work. But although it is equipped with rubber tires and is drawn by fast animals, its work is not comparable with that of the motor.

There has been little tire trouble and no extra tire is carried by the machine regularly, but when a call is made for a long distance run, say five or six miles, an extra tire, already blown up, of which two are always kept at the station, is placed on the machine. Every

puncture is immediately vulcanized by use of a Shaler electric vulcanizer, which is part of the station equipment of the apparatus.

The machine can be gotten under way within ten or fifteen seconds from the time an alarm comes in. Members of the squad company answer the calls on the telephone, thereby saving one element of delay when minutes may count up into hundreds of dollars. Illustrations of the time made are a four-mile run over an exceptionally heavy road in ten minutes and a six-mile run to a neighboring village over average country roads in thirteen minutes.

The latest addition to the Manchester fire apparatus is an American La France combination truck and chemical, known as type 14, which went into commission January 25 of this year. This carries a 40-gallon chemical tank and two 3-gallon ponies, an extra charge for the main tank always being carried on the car. The ladders carried are one of 50, 35, 14, 28, 24, 12, 8, 20 and 16 feet and two 25 feet in length; a total of over 250 feet. The tires are 38x4½ Dayton airless tires, the rear ones being double and one on each side being fitted with friction chains in winter. One hundred feet of chemical hose are carried and other regular equipment of bars, hooks, etc. A searchlight is mounted in front of the driver's seat, and the headlights are fitted with electric and acetylene gas lamps. The truck cost \$6,000. Its complement of men comprises captain, driver and six men, all of whom are being broken in as chauffeurs.

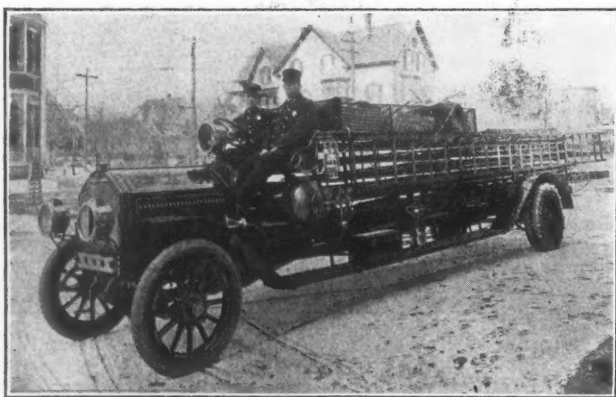
There are now 55 horses doing service in the department, some of which will be displaced in a short time by the adoption of an auto tractor which will be applied to one of the heavier pieces of apparatus. A three-horse ladder truck is nearing the end of its usefulness and will undoubtedly be replaced by an automobile, as will the other heavy apparatus as it wears out.

#### REFUSE DISPOSAL IN HAVRE.

The city of Havre, France, in 1912, put into operation a refuse incinerator which cost \$96,500; \$52,110 additional having been paid for quarters for the force employed and other additions to the building. The plant is said to have a capacity of 150 tons a day, although the amount burned at present is about 80 tons. The fires are kept up continually by three 8-hour shifts, each consisting of eight men and a foreman.

Previous to April, 1912, horse-drawn carts were used in collecting the refuse, the work being done under a contract for \$45,355 a year. In that month the city began municipal collection, using nineteen automobiles for the purpose. These were 4-cylinder, 25 to 30 horsepower, with a capacity of about 7 cubic yards. The bodies are of steel and are of the sliding rear-dump design. Originally, each automobile drew a trailer, but this has been abandoned. The cost of the outfit was \$85,460. It is estimated that for the twelve months beginning January 1, 1913, the cost of collection will be \$70,445, or about \$25,000 more than contract collection by horses. This additional cost has been the subject of considerable discussion, and apparently indicates that automobile collection is not economical—a conclusion reached in other cities.

Previous to the inaugurating of city collection, householders could deposit their ashes and refuse in any sort of receptacle; but they must now use a zinc pail with a cover, which pail must have a capacity of not less than 9 quarts nor more than 27¼ quarts, and must not exceed 19.7 inches in either height or diameter. Each can must bear the name and address of its owner.



MANCHESTER'S NEW TRUCK.



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Subscribers desiring information concerning municipal matters are requested to call upon MUNICIPAL JOURNAL, which has unusual facilities for furnishing the same, and will do so gladly and without cost.

MARCH 27, 1913.

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## Standard of Purity for Sewage Effluents.

A bill has been introduced in the State Assembly of New Jersey which has aroused considerable opposition in some cities of that state, nor do we understand just who would be in favor of it. This bill requires the State Board of Health to establish a standard of purity for effluents, which shall be required of every sewage disposal plant which discharges its effluent into any of the fresh waters of that state. As the bill provides that the board shall make a complete analysis of the effluent of every such sewage disposal plant, such analysis to show the "color, odor—cold, odor—hot, turbidity, solids in solution, solids in suspension, total solids, loss on ignition, mineral residue, appearance on ignition, nitrogen (1) as ammonia, (2) by permanganate in solution, (3) by permanganate in suspension, (4) by total permanganate, (5) as nitrites, (6) as nitrates, (7) total oxygen consumed, chlorine alkalinity, bacteria per c.c. or fraction thereof at 20 deg. C and 137.5 C., red colonies, bacilli coli, and a statement that the analysis does or does not meet the requirements of the standard set," it would appear that such standard is to contain certain fixed limits for each of the items mentioned.

The bill provides that such an analysis shall be taken of all the disposal plants in the state discharging into

fresh waters (we believe there are over fifty of these) within three months of the passage of the bill, and at intervals of three months thereafter; a copy of the analysis being furnished to the Board of Health or other officer of every municipality which uses or is located on the stream or other body of water into which the effluent is discharged. If at any time three of the four samples taken within one year should fall below the standard of purity set, the board must certify this fact to a justice of the Supreme Court, who must thereupon order that some plan or method of disposing of the sewage be adopted which shall produce an effluent which will come up to the standard; eighteen months being given to the parties responsible for the effluent to complete a plant which will satisfactorily treat the sewage. Before giving the final order, the justice must appoint a time and place for hearing evidence on either side. Should the State Board of Health fail to take proper action as indicated in the bill, the local Board of Health or governing body may certify this fact to the Supreme Court, which must then give it permission to do the things omitted by the State Board at the expense of the state. The expense of rebuilding plants, as well as all other expenses, may be assessed by the Supreme Court wholly against the municipality, or the justice may order a part to be paid by the state "if the facts warrant." Finally, it is provided that when an order is issued by the Supreme Court for a more acceptable purification plant, the municipality may raise the money therefor by the sale of bonds in the way provided for the original construction of sewage disposal plants. Any members of the governing body of a municipality who shall neglect or refuse to comply with such an order will be considered guilty of a misdemeanor.

What prospect this bill has of passing we cannot say; but it seems to us almost an absurdity, and one which it would be so utterly impracticable to carry out that it would not be enforced. No standard of purity could be set which, while adequate for some of the streams of the State, would not be unnecessarily stringent for others. England endeavored for years to establish a standard of this kind, but several years ago all sanitarians, we believe, conceded that the idea was impracticable. It might be possible to establish a standard of permissible *B. coli*, a general provision that all effluents must be non-putrescible, or that non-colloidal suspended matter should not exceed a certain amount; but beyond some such general standard we believe it is impracticable and foolish to attempt to go.

There is an idea embodied in this bill, however, which we believe is an excellent one, and which should be included among the powers and duties of every State Board of Health. This is the power and obligation of such board to see that every sewage disposal plant within the state is kept operating at a fair degree of efficiency, and securing general results such as may be required by the state board. But the results required would not be standardized for the entire state. The problem is such a complicated one that, unless we adhere to the now practically abandoned idea of demanding in every case such purification as is obtained by the best intermittent sand filtration, the State Board of Health or other authority, state or federal, must be given power to decide just what degree of purification is required in each case, and moreover have the right to modify this from time to time as conditions may change, generally in the direction of demanding a higher degree of purification, as by the addition of filters to existing sedimentation tanks, etc.



## NEWS OF THE MUNICIPALITIES

Current Subjects of General Interest Under Consideration by City Councils and Department Heads—Streets  
Water Works, Lighting and Sanitary Matters—Fire and Police Items—Government and Finance.

### ROADS AND PAVEMENTS

#### Laying Concrete Walks.

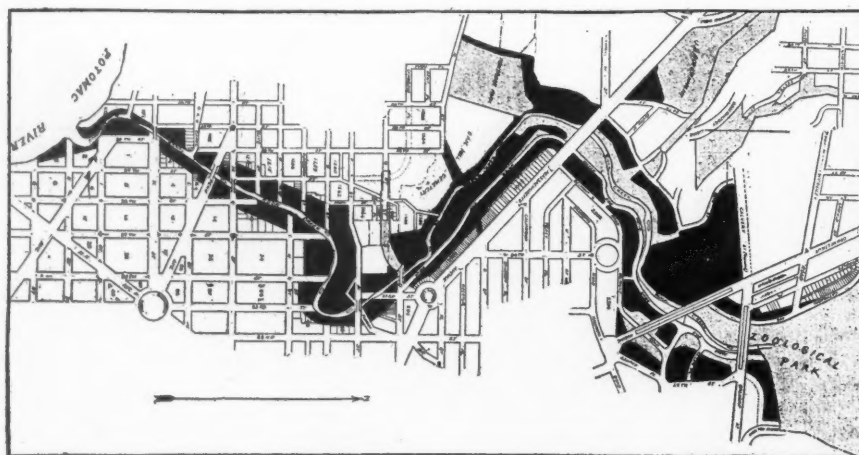
Van Alstyne, Tex.—Contracts have recently been closed for the building of practically one mile of concrete walks in the residence portion of the town. Since this movement was started last summer more than two miles of concrete walks have been laid. The City Council is encouraging the movement by putting in good concrete street crossings across all streets where the property owner has put in these walks, and more than thirty of these crossings have recently been put down.

#### Pavers Start Work on Eleven Streets.

Baltimore, Md.—In compliance with an order issued by the Paving Commission for paving contractors to resume operations on city streets upon the return of mild weather, a report filed in the City Hall shows that work has already been started on eleven streets. The Paving Commission contemplates paving 31 miles of city streets this year. Orders have been issued for paving 39 streets between now and June 1. During 1912 30 miles of city streets were placed under contract, aggregating \$1,400,000. Of this number 17 miles were completed. The remaining 13 miles of streets under contract were brought forward into this year and will be completed, it is expected, with the 18 miles of streets which will be paved out of the 1913 appropriation. During the year the Paving Commission plans, wherever practical, to connect with improved paving the streets paved during 1912, so that within a year it will be possible to motor or drive from one end of the city to the other on smoothly paved thoroughfares. It is also planned to pay particular attention to paving in the business section, so that merchants may haul merchandise to and from the wharves, railroad stations and terminal warehouses without difficulty and at a far less cost than formerly.

#### Plan System of Boulevards Connecting Parks.

Washington, D. C.—By an act of Congress a law has been passed enabling a commission of cabinet officers to proceed to acquire land for what will be one of the most beautiful systems of drives and roads around any city of the world. The accompanying map illustrates the plan proposed for connecting the parks of Rock Creek, Zoological and Potomac by a chain of boulevards.



WASHINGTON PARKS CONNECTED BY BOULEVARD SYSTEM.

#### Start Paving Work at Leavenworth.

Leavenworth, Wash.—After a delay lasting six months, during which time attempts have been made by the Great Northern railway and private owners of property to annul the contract for paving, the town of Leavenworth has been permitted to proceed with the improvement operations. The Chelan county courts have held that the proceedings were legal and that the contract cannot be annulled. The improvement will cost Leavenworth approximately \$50,000.

#### Rome Uses Asphalt.

Rome, Ga.—The paving of East Fourth street has been completed by the Southern Asphalt and Construction Company, and that concern will now take up the paving of Fourth avenue, which is being graded preparatory to the work. The material used on these two streets is sheet asphalt and is different from any other in the city. Rome has a variety of paving, including vitrified brick, wood block and asphalt macadam.

#### Ask Township to Take Road.

Springfield, N. J.—A petition is being circulated among the property owners in Tooker avenue for the acceptance of that thoroughfare by the township as a township street. Several months ago the matter was taken up with the township officials, but the Township Committee refused to accept the street because it was not wide enough. The width required by the township is fifty feet from property on one side to that on the other, thirty feet for roadway and ten feet on either side for sidewalks. The petition being circulated at the present time calls for a fifty-foot roadway and complies with all conditions of the township laws. The property owners on the south side of the street will give five feet of land, while the property owners on the north side will give ten feet to make up the required fifty feet.

#### City's Attitude on Street Paving Materials Outlined.

St. Paul, Minn.—Mayor Keller has submitted the following points to which the city was committed on its paving policy:

The city shall do its own work in all cases, and shall not abandon that principle until actually about to be swamped by the rush of work. Creosoted blocks shall be the preferred paving for heavily traveled streets where the property will stand the cost, and where the grades are not too steep. On steep grades, sandstone shall be used. Brick, or another suitable and cheap material, shall be used on streets having car lines and which demand a moderately priced paving. Asphaltic concrete shall be used on streets needing a cheap paving, where there are no car lines. City Engineer Claussen and City Chemist Roehrich will draw up specifications for the manufacture of the material by the city, which will take the risk of suits for infringements of patents by the Warren Brothers, manufacturers of bitulithic. In addition to the other agreement, it was settled that every effort should be made to rush all work so that favorable prices could be obtained on materials, and that the city might be in a position to do its own work with dispatch.

The new addition to the asphalt plant, for which \$25,000 was provided in this year's budget, will be equipped to

make asphaltic concrete. Immediate work on the specifications will go forward, and every effort made to facilitate the paving. The "season" will open in about a month.

#### **Paving Work Will Commence Shortly.**

Long Branch, N. J.—Ernest Sheckelford, the New Jersey manager for the Standard Bitulithic Company, whose residence is at Atlantic City, in conference with the Commissioners and City Engineer of Long Branch, promised to soon have a force of men at the work of tearing off the asphalt covering between Rockwell avenue and Second avenue. It is expected that a week later paving will be started. It is proposed to have two gangs at work, one in the western and one in the lower section of the city, and to push the work with all possible haste.

#### **Paving in Altoona.**

Altoona, Pa.—Street paving operations for the summer season have been resumed by the Bell-Bookel Company, Eighteenth avenue between Twelfth and Thirteenth streets being the first thoroughfare to be taken up.

There are several short stretches of street on the west side of the city which will be paved during the spring by the contractors. Just how much will be accomplished during the summer will depend entirely on how the money holds out. There still remains about \$42,000 of the last loan to be expended, which means that about \$120,000 worth of work can be done, since the city pays but one third of the cost. This will keep the contractors busy throughout the greater part of the summer. Legislation has been passed already for considerable paving that will not be reached in the loan of 1910.

There is a sentiment in favor of adopting a plan whereby the streets in the outlying district may be paved with a little less cost. On the East Side hill last summer the thickness of the concrete base was reduced and a considerable saving was effected without detriment to the quality of the work. Where traffic is so light six inches of concrete base is deemed sufficient. Brick will be used on the work to be done during the present year.

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## **SEWERAGE AND SANITATION**

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#### **Town to Set Fly Traps.**

Norristown, Pa.—The Civic Club of Norristown has endorsed the plan of the Norristown Board of Health to rid the borough of flies this summer by catching them by the wholesale in large traps set on the street. One trap had been ordered, and if the experiment proves successful Health Officer White says others will be bought.

#### **Seeks Substitute for Public Drinking Cups.**

Syracuse, N. Y.—Commissioner of Public Safety H. E. Hessler is giving serious consideration to a plan for placing a number of paper drinking cup vending machines in the public buildings and on the streets of the city. Representatives of firms manufacturing the cups and machines have called upon him, and one of the propositions made he believes worth a trial. This firm offers to turn over to the city treasury or the funds of any department 10 per cent. of the receipts of all the machines. "It is a sure thing that the public drinking cup must go," the commissioner said, "and it is something of a problem to provide a substitute. Of course, we have not the power now absolutely to prohibit the public drinking cup, but we can place an individual paper cup in direct competition with it, and then the citizen will have the privilege of a choice. I assume that there will be a great deal of objection to spending a penny for a cup, but some alternative for the public cup must be provided. We thought we had a solution of the problem in the 'bubbler' fountains that we have in the schools. But now I am told that these are not hygienic or sanitary, because, instead of drinking the water as it bubbles up, many persons pass their lips down on to the nozzle when they drink. That is just as bad as a cup.

If we put these paper cups into the schools we ought to have a vender at each fountain, and an arrangement can be made whereby the children will not be required to deposit a cent every time they want a cup. Of course, it would not do to give away these cups on the street, but it could be done in the schools. The 10 per cent. received by the city could be used to good advantage in the fight against tuberculosis or other health work. In my opinion there are many persons in Syracuse who would be glad of an opportunity to buy paper cups."

#### **Consider Experiment with Sewage Tank.**

Montclair, N. J.—A proposition to install an experimental sewage disposal plant to show what can be done by the methods of the Chemical Process Company of New York was submitted to a special meeting of the joint sewer committee of Orange, East Orange and Montclair. The conference took place in the office of the city engineer, East Orange. The committee spent two hours discussing the proposition, but in view of the possibility that the legislature may block further steps for disposal within the Passaic Valley district, no action was taken. Estimates by the Chemical Process Company set forth that the installation of a plant to care for 17,000,000 gallons of sewage a day in 1925 would cost \$225,000, and the annual cost of maintenance would be \$40,963, not including royalties. The company submitted, with its proposition, a comparative table, in which the construction cost at lowest estimates for the disposal system based on the Imhoff settling tank would be \$1,178,000 and the maintenance cost \$83,125 a year. The same table places the "probable cost," on the Imhoff basis, at \$1,400,000 and maintenance at \$110,500. The company's proposition is to install the experimenting plant and operate it for three months at an aggregate cost of \$17,500, and if at the end of that period it should prove to be satisfactory the original plant could be made a part of the permanent plant.

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## **WATER SUPPLY**

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#### **Small Profit from City Water Plant.**

Manitowoc, Wis.—Manitowoc adds its testimony to cities where municipal ownership has not proved a great success. Figures submitted by experts who investigated the revenues of the municipal water plant show less than 3 per cent. on the investment the first year, with a record of \$27,000 profits annually to the old company, when the plant was privately operated. The city has \$275,000 invested in the property at this time.

#### **Town of Thomaston Has Pure Water.**

Thomaston, Ga.—The filter at the water works plant is now in operation and will be in constant use from now on purifying Potato Creek water. The filtered water will be used exclusively hereafter by the Thomaston water works system.

#### **Installing Meters in Louisville.**

Louisville, Ky.—Plans that call for the expenditure of more than a quarter of a million dollars by the Louisville Water Company, to give meter service to every user of water in the city of Louisville, are being considered by the Water Works Board, and the first step to put the plan into execution will be taken next month, with the arbitrary installation of water meters in more than 1,400 houses in the central portion of the city. After the installation of the first lot of meters, the work of giving meter service to every user in the other sections of the city will begin. There will be no additional charge for the meters to property owners, but renters will be required to make a deposit sufficient to guarantee the payment of their bills. There are 26,000 water services in the houses and buildings of Louisville, and meters connected to only 3,000 of this number. The water wasted, statistics compiled by the local water company show, amounts to about 60 per cent. of the amount pumped. The city of Louisville consumes about 25,000,000 gallons of water daily, and in a



short while the local pumping station will have a capacity of nearly 70,000,000 gallons daily. The 1,400 meters to be installed at once are to be attached to services where the consumption exceeds the flat rate of \$36 a year. Those on unlimited service who pay that amount or more will have to go on meter service, but it will be some time before the small consumer will pay for what he actually uses. Estimating the average price of water meters at \$10, it will require an expenditure of about \$300,000 by the water company to furnish every service in Louisville with a meter. Many people will save by the plan, however, as the flat rate to all now being charged is graded to cover the enormous waste of water by those who abuse the flat rate privilege.

#### Praise Filtered Water.

Grand Rapids, Mich.—The Grand Rapids filtration plant was explained by L. D. Cutcheon, of the Board of Public Works, and W. A. Sperry, chief chemist, at the meeting of the committee of 100 of the Grand Rapids Association of Commerce. Mr. Sperry said the water is free of any chemical added at the plant when it reaches the consumer, has no suspended matter in it, and the effort is to give a water of the Lake Michigan standard of purity. He estimated that in sanitary value, including reduction of typhoid fever danger and in commercial value, the river water has been increased \$750 a day by the filtration method.

#### Test Lake Erie Water.

Cleveland, O.—Before deciding what steps shall be taken to minimize the pollution of Lake Erie water, bacteriological tests will be made by chemists of lake cities, among them Dr. P. E. Bethards, bacteriologist of the Toledo Health Department. This was decided at a meeting in Cleveland of the engineers' meeting of the State Board of Health and representatives of Toledo. The meeting was the result of complaints by the Canadian cities to the effect that the lakes are polluted by sewage from American cities. It was decided at the meeting to ask the State Legislature to appropriate \$3,000 to be used in carrying on the bacteriological surveys. The survey will have a fixed standard of tests, so that it will be possible to learn not only how much the waters of the lake are polluted by sewage, but also what cities on the lake contribute most toward this pollution. The board members appointed a committee of three to fix standards of tests to be used in this survey. Members of this committee are Dr. T. R. Brown, of Columbus, chief bacteriologist of the State Board of Health; Dr. Roger G. Perkins, bacteriologist of the Cleveland board, and Dr. Bethards, bacteriologist of the Toledo board.

#### Great Waste of Water by Leakage.

Baltimore, Md.—As an example of the great amount of water lost in Baltimore through leaky pipes, Water Engineer Whitman produced figures to show that through a hole one-thirty-second of an inch in diameter 200 gallons of water is wasted in twenty-four hours. In making an investigation of the amount of water lost through leakage, the Water Engineer hopes to devise some means by which the water stored behind the new 192-foot dam at Loch Raven will be sufficient to supply the needs of Baltimore for many years and obviate the necessity of an additional water loan until the very distant future. Further, Mr. Whitman discovered that through a hole one-sixteenth of an inch in diameter 800 gallons of water is lost every twenty-four hours; a hole one-eighth of an inch, 3,000 gallons; a quarter of an inch hole, 12,000 gallons; while a hole one-half inch in diameter will allow 50,000 gallons of water to escape in twenty-four hours. This is as much as the average family will consume in a year's time. The Water Engineer has two remedies for this evil. One is the establishment of a division whose duty it will be to discover these leaks. The other is the installation of water meters. The adoption of the water-meter system will solve the entire problem, however, Mr. Whitman believes. It will accomplish many purposes. The

people will pay only for the water consumed, and they will be careful not to waste water.

#### Cofferdam Destroyed by High Water.

Rochester, N. Y.—High water in the Genesee River caused about \$2,000 damage to one concern alone, when it washed away a cofferdam which the Ripton & Murphy Contracting Company had been building for two months and a half at Avenue D. Work on the dam had been practically completed, and the contracting company had planned to begin work in laying sewer pipe which would connect with the West Side sewer. The dam will have to be entirely rebuilt.

#### Remodel Pumping Station.

Winston-Salem, N. C.—The entire plant at the pumping station is being remodeled by the Crawford Plumbing & Mill Supply Company, contractors, according to the plans drawn up by J. N. Ambler, preparatory to giving Winston a pumping station with a capacity for pumping 5,000,000 gallons of filtered water to the city daily to meet the increased demand for water by citizens and industrial concerns as well as for fire protection. The two smaller pumps, together with their foundations, are being torn out, and the foundation is being put in for the new pump which is also being mounted. Arrangements are being made whereby either pump can pump into different mains or into both of them. The new force main is being connected. A large 24-inch suction pipe for both pumps to work from is being put in, and the pipe work and connections are being remodeled. The improvements will practically give the city a brand new pumping station capable of supplying all demands for some years to come.

#### Officials Inspect Cleveland Plant.

Cleveland, O.—Thorough inspection of Cleveland's chlorine plant for its water supply has been made by the Mayor, Service Director, and Water Works Superintendent of Youngstown. The officials investigated every detail of the system in use and noted the effects of the chemical. The process of injecting the chlorine mixture was watched and data were secured on its effect. Cleveland uses about nine pounds of chlorine to every million gallons of water. This is claimed to be sufficient, inasmuch as the lake water is comparatively pure. In Youngstown, it is said, considerably less alum would have to be used in case chlorine was first supplied to the water. In any case, the alum would be absolutely necessary for removing the dead germs and other foreign matter.

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## STREET LIGHTING AND POWER

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#### Profit from Gas Waste.

Richmond, Va.—The city can make a clear profit of at least \$5,219.50 a year by utilizing the by-products of the gas works, now either going to waste entirely, or sold at small prices, according to a preliminary report made by Thomas W. Pritchard, a chemical engineer of Wilmington, N. C., to the Administrative Board. For a commission of 6 per cent. Mr. Pritchard offers to prepare working plans for such a plant as will be necessary to refine the oils and tar, and at his own cost to have his chemical analysis checked by Professor Baskerville, of New York University, and Professor Whitaker, of Columbia University, consulting chemists. The approximate cost of such a plant as would be needed, he reports, will be about \$12,000; the gross yield, \$64.80 per day, and the cost of operation per day, \$50.50, leaving a daily profit of \$14.30, or \$5,219.50 per annum. These figures, he states, are on the most conservative lines, with the minimum output, and with the growth of the works a much greater profit might be anticipated. The plant, Mr. Pritchard reports, will be of a character that can be readily constructed by local contractors on the plans he offers to furnish. The board will take the matter up.



**Sustains Lighting Rates.**

Trenton, N. J.—That the new schedule put into effect by the Public Service Electric Company for municipal lighting would not, as a whole, bring to the company an unusual return on a reasonable or legitimate investment, was the effect of a decision handed down by the Public Utility Commission. The board holds that there are neither excessive charges nor undue discrimination in the rates, and has dismissed the complaints filed by a number of municipalities which tried to have an order issued to modify the new contracts proposed by the company. As the result of the decision, the schedule of lighting rates submitted by the company last April will be sustained. It involves a net decrease approximately of \$100,000 in the charges previously in force. There are a number of increases in the schedule of charges made to some of the municipalities served, but the total of these is small compared to the total reductions.

**Testing Gas and Electric Meters.**

New York, N. Y.—Reports of gas and electric meter tests to the Public Service Commission for the First District for the month of February show that 30,645 gas meters and 65 electric meters within Greater New York were tested during the month. Of the gas meters, 426 and all of the electric meters were tested upon complaint. About 51 per cent. of the gas meters were found to be within the limits of accuracy allowed by law, about 40 per cent. fast, and 9 per cent. slow. Of the electric meters, 89 per cent. were found within the legal limits of accuracy, about 5 per cent. fast, and 6 per cent. slow.

**Gas Blows Up in Subway.**

Boston, Mass.—An explosion in the new West End subway loop on Scollay Square the afternoon of March 15, which could be heard a quarter of a mile away, caused a car to leave the rails and crash into a building, and created intense excitement among the afternoon shoppers throughout the district. Three persons were slightly injured. The accident was caused by the ignition of gas by a short circuit in the electric light wires running through the area of new construction work. The force of the explosion threw up the heavy planks covering the new work like toothpicks, driving them against the trucks of a car which was slowly rounding the curve into Hanover street at that point. The car, derailed by the planking, left the tracks, and, carried by its momentum on the down grade, rode up on to the sidewalk and crashed into the entrance of a basement hat store, scattering the crowd on the pavement in all directions. The light in several of the stores on Scollay Square were also cut off by the short circuiting of the wires. An alarm of fire was turned in immediately after the explosion, as some of the planking had caught fire, but the blaze was quickly extinguished.

**Improper Wiring May Result in Serious Damage.**

Topeka, Kan.—According to the annual report of G. G. O'Neill, superintendent of the municipal electric lighting plant, which has been filed with the city clerk, the plant is in grave danger of heavy loss through fire on account of improper wiring. And in case of a serious fire the city would be left in total darkness. The superintendent recommends that the plant be rewired, and that arrangements be made with the Topeka Edison Company to have their three-phase, 2,500-volt, lines run to the plant, so that the entire load could be switched to the Edison lines in case of a breakdown. This would take the place of a second relay outfit, according to the report, and would cost only a few hundred dollars, whereas new equipment would cost several thousand dollars. The cost of operating the plant in 1912, according to the report, was \$16,293.26. This includes the cost of light installation and maintenance. The special lighting expense, which includes the connections to the White Way, installation on the Melan arch bridge, and maintenance, amounted to \$3,077.09. The cost of maintaining the White Way on Kansas avenue was \$1,570.70. The Edison Company offered to maintain nine blocks of white way for \$5,500. Consequently, this repre-

sents a saving to the city of \$3,929.30, or \$36.38 cents per pole. The cost of maintaining each pole was \$14.54. The total number of lamps in operation in the city was 1,294. Of this number, 439 were arc lamps.

**FIRE AND POLICE****One Day Off in Six Voted by Northampton.**

Northampton, Mass.—The city council of Northampton has passed an order authorizing one day off in six for the firemen. Northampton, Taunton and Lowell were the three cities that at the last election rejected the act giving one day off duty in five to the permanent fire force. The council, however, is willing to grant part of the demand and to make a day in six. The bill is progressing in the legislature to make the state law that a majority of the cities accepted in 1912 apply to the remaining three.

**Firemen Make 36 Runs in 1912.**

Mount Vernon, Ind.—A record of runs made by the Mount Vernon fire department, as kept by Fireman Frank Fessenden, shows a total of 36 for the year 1912. The hose was used but eleven times, two were false alarms and the balance of the runs were small fires that were extinguished with but a few minutes' work. No large fires occurred during the past year, the property loss being only about \$3,000, while the property endangered by these fires amounted to many times that amount.

**Want Members of Their Sex on Police Force.**

Chicago, Ill.—Chicago women have approved the suggestion to having women members of the police force. Mayor Harrison has said he thought the experiment well worth trying. Mrs. Joseph T. Bowen, well known in philanthropic circles, said she would consent to be a policewoman if the community thought she ought to do so. She suggested for a uniform a long navy blue coat, raglan style, reaching to hem of the skirt; brass buttons up the front; soft navy blue felt hat, compromise between Balkan turban and a derby; heavy black gauntlets, low heeled, walking shoes, and a star. Others who approve of policewomen are Mrs. Gertrude Britton Howe, Miss Mary McDowell, Mrs. George S. Welles, and Mrs. George W. Plummer.

**City Gets New Fire House.**

Philadelphia, Pa.—The new engine house of Engine Company No. 19, which is being erected on Cheltenham avenue, east of Germantown avenue, will be completed and ready for occupancy by next July. It will cost \$38,000 and will be one of the finest and most modern engine houses in the city. All the latest appliances for facilitating the daily work of the firemen will be installed, and in addition the building will contain every convenience for the men stationed in it. The dilapidated structure formerly occupied by Engine Company No. 19 on East Cheltenham avenue will be razed. It was erected in 1878 and years ago became inadequate for the needs of the firemen. Until their new building is completed, the company is occupying temporary quarters with the men of Truck Company No. 8.

**Nine New Fire Houses Opened.**

New York, N. Y.—As a part of the ceremony of dedicating to the city's service nine new fire houses and ten new engine companies, Mayor Gaynor on March 21, turned in a false alarm of fire. Within forty seconds from the time Mayor Gaynor "pulled the box" specially installed in front of City Hall, Fire Chief Kenlon's red motor flashed into view in its dash from the station at Fulton and Church streets, followed by a motor-propelled chemical scout engine, a motor-propelled fire engine, and a motor-propelled hook and ladder truck.

The annual presentation of Fire Department medals shared with the installation services in contributing a history-making day for the department. Commencing at 10.30 A. M., Commissioner Johnson, Deputy Commissioner Ovary and Chief Kenlon visited in succession and officially opened the nine new fire houses.

## MOTOR VEHICLES

### Chief Reports on Auto Expense.

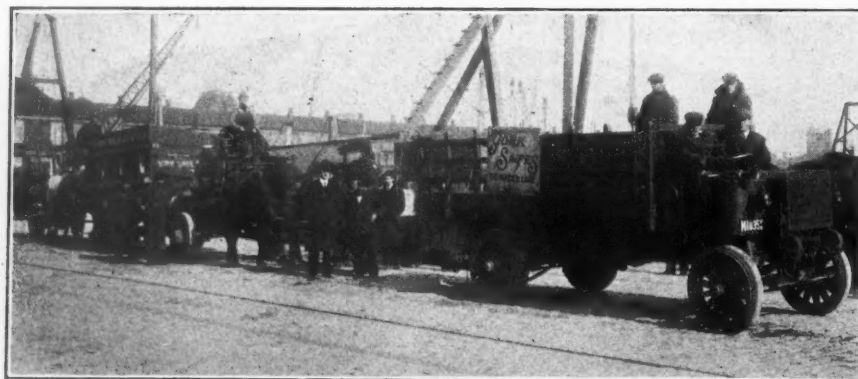
Richmond, Ind.—Fire Chief E. E. Miller reports that the new fire truck has cost approximately 30 cents a day for up-keep. The entire expense of the fire department for the year was \$30,528.58, of which amount the cost of the fire truck was \$5,672.51. The company saved from destruction by fires buildings amounting in value to \$128,555.

### Establish First Auto Ambulance.

San Jose, Cal.—San Jose saw for the first time last week an automobile ambulance in action when the big Haynes car recently placed in service by the local Haynes agent, F. E. Granger, went dashing down the street in response to a call. The chassis itself is that of the regular construction, but the body was built in San Jose after Mr. Granger and his head mechanic had consulted with several of the physicians of the city as to the requirements for a conveyance of this character. All who have inspected the car pronounce it first-class, and the test made during the week more than satisfied those who were interested in having it equipped. It is not a public conveyance, but may be had at any hour of the day or night by calling the Haynes agency.

### Hydraulic Transmission Truck Hauls 45-Ton Load.

New York, N. Y.—Another remarkable trailer haul was made by the La France hydraulic truck. A frame for the door of the new vaults which are being put in the bank clearing house of New York had to be moved through the streets of New York. The frame was placed upon a four-wheel wagon, which itself, empty, weighed 16,400 pounds. The frame was 7 feet 6 inches wide, 9 feet long, and 3 feet 6 inches thick, and this frame weighed exactly 52,600 pounds. The La France hydraulic truck was loaded with five steel plates for this vault, which in the aggregate weighed 12,100 pounds. The La France truck itself weighs 4½ tons, so that the total load to be moved was 90,100 pounds. Two horses were hitched to the pole of the truck so as to control this pole and keep the trailer steered right. A grade of 4½ per cent. was encountered on Broadway at Bowling Green, just above Beaver street. The frame was placed upon timbers mounted on the truck, and the load was so heavy that it crushed the timbers and the load had to be stopped and the frame jacked up and new timbers placed underneath. The only damage done was one small manhole on Whitehall street, which was broken. In order to show its remarkable tractive effort the truck was stopped with its load on the 4½ per cent. grade at Bowling Green and had no difficulty at all in starting again. The draw bar pull required to start this load and keep it moving on this hill was a little over 9,000 pounds. This demonstration illustrated very forcibly the fact that because of this hydraulic transmission the La France hydraulic truck is capable of exerting a tremendous draw bar pull at starting and at low speeds. The speed at which the load was hauled was 4 miles per hour. It would have taken at least 20 horses to do this job, and they would probably not have moved over 2½ miles an hour at the

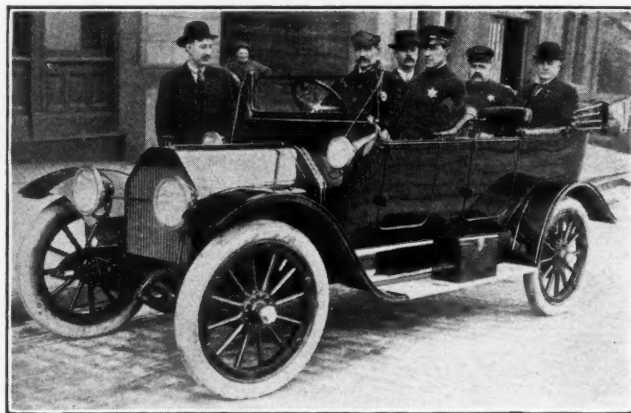


LA FRANCE HYDRAULIC TRUCK HAULING 45-TON LOAD.

most. The fact that this load was moved at 4 miles an hour instead of 2½ made it possible to move it over the road without breaking a large number of manhole covers and without damaging the road. In fact, the load was so heavy that after the automobile had delivered the truck and frame to its destination the very weight of the equipment standing still made the wheels cut into the asphalt, although moving along the road it made no impression.

### Police Auto Arrives.

Tacoma, Wash.—The picture illustrates Tacoma's new police department automobile for the traffic and detective departments. This is the first of the new Studebaker seven-passenger "35" touring cars to reach the city. From right to left the group includes Chief A. P. Loomis, Capt. A. S.



Courtesy Tacoma Daily Ledger.

TACOMA'S NEW POLICE DEPARTMENT AUTOMOBILE.

Read, Sergeant F. V. Hill, Detective A. C. Brown, Capt. J. C. Cornish of the traffic squad at the wheel, and Detective Price Recob. The car is equipped with electric lights and starter, and is a vast improvement in the matter of appointments over Studebaker cars of a year ago. It will be used to care for much work for which the old machine is not fitted. This gives the police department a patrol auto, a touring car, and five motorcycles for the traffic squad.

### Received \$100,000 Worth of Orders on One Day.

Allentown, Pa.—The Webb Auto Fire Apparatus Company in twenty-four hours received \$100,000 worth of orders from Calgary, Can.; Racine, Wis.; Nashville and Schenectady, N. Y.

### Motor Engine Sought by Waterbury.

Waterbury, Conn.—The board of public safety of Waterbury has voted to purchase a Robinson "Jumbo" gasoline motor pump fire engine to replace a steamer which has been in service 30 years. It is the same make as apparatus just delivered in Lynn. The builders require 100 days for delivery. The apparatus is made in St. Louis.

### Janesville Will Soon Receive First Motor Apparatus.

Janesville, Wis.—Janesville's first motor-propelled fire truck will be delivered early in the month of May. It is now about a month since the contract for its purchase was signed by the Mayor and City Clerk, and, according to the terms of this contract with the Seagrave Company, delivery is to be made in 90 days from time of order, barring delays caused by certain highly improbable contingencies. The new truck will be almost an exact duplicate of the one recently purchased by the city of Madison. The only noteworthy differences are that the brass work on the Janesville truck will be nickel-plated, and the engine will be water-cooled instead of air-cooled. As all the apparatus now owned by the city, excepting the fire engine in the west side station, is fitted with brass fixtures, it was thought best to have the fixtures on



the motor truck in harmony. Although the bore and stroke of the six cylinders of the engines in Madison and Janesville machines are the same, the later will be a little more powerful. The water-cooled engine is fitted with larger inlet and exhaust valves and develops six or seven more horse power. The A. L. A. M. rating is 79.8 H. P. The water jackets are of exceptionally large size, and if at any time the circulating pump or any other part of the cooling system be crippled, the turning of a valve will permit the fan to the rear of the radiator to force a powerful current of air through the jackets and cool the cylinders.

#### **Advises Motor Equipment for Department.**

Saratoga, N. Y.—E. J. Shadwick, chief of the fire department, has submitted his thirty-third annual report to Fire Commissioner John T. White. For thirty-three years Chief Shadwick has been at the head of the local department, guarding the lives and property of Saratogians. He says outside of the automobile there is not a modern or safe piece of apparatus or ladder in the fire department. The newest piece of apparatus in the department has been in service over twenty years and some of it for forty-five. He advises motorizing the department at once on the grounds of efficiency and economy.

#### **Urges Motor Apparatus Equipment.**

Providence, R. I.—Stringent regulations governing the storage and use of celluloid in manufacturing establishments of the city are urged by the Board of Fire Commissioners, in its annual report, submitted to the city council. The board states that a list of all places in which celluloid is used in manufacturing industries should be filed with the fire department, and that signs denoting the presence of the material should be posted at the manufactories. The subject is brought to the attention of the council in connection with the Calendar street fire last July, when two members of Hose Company 1 lost their lives by inhaling poisonous gases. Under the head of "apparatus" the board again urges the motorization of the department, stating the belief of the commissioners that such a course would result in more economical maintenance of the department and increased efficiency for the service. "The experience which we have had with motor-driven apparatus," states the report, "has been such as to strengthen the conviction of the board that this type of equipment is better adapted for fire department service and vastly superior to the horse-drawn models, and that this conviction is shared by a majority of those connected with a similar service in other cities is shown by the fact that in the purchase of new apparatus, as well as in the renewal of old, preference is in almost every instance given to the motor-driven type."

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## **GOVERNMENT AND FINANCE**

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#### **Will Restrict Sale of Liquor.**

Rosalia, Wash.—At the regular meeting of the Rosalia City Council an ordinance was passed restricting the number of saloons in the town to one and raising the license fee from \$1,000 to \$1,500 a year. The new ordinance carries with it several stringent restrictions, making it possible for any member of a family to prevent by affidavit the sale of liquor to any other member of the family, and provides that the saloon close at 9 p. m. and open not before 5 a. m. The ordinance was adopted as a compromise. Mayor D. A. Angus has refused to sign it, but it will probably be put into effect without his signature, as a majority of the council are in favor of the measure.

#### **Commission Rule for Vineland.**

Vineland, N. J.—The commission form of government was adopted at a special election by a vote of 440 to 175. A primary election will be held in three weeks.

#### **Will Name Steel City Ojibway.**

Ojibway, Canada.—Ojibway, not Pontiac, is to be the name of the new city which will be built on the banks of the Detroit River, below Windsor, around the Canadian plant of the United States Steel Corporation. Change of name was decided on as a result of protests against the name Pontiac. The name selected for the city is that

of the little hamlet that stands now on the site of the steel plant, with a variation of spelling, however, for the sake of historical accuracy. The post-office below Sandwich is at present known as Ojibway. The historical significance of the name lies in the fact that warning of Pontiac's conspiracy to take Detroit in 1763 was carried to Major Gladwin, in charge of the fort, by an Indian maiden of the Ojibways. Permission for the change of name in the bill for the incorporation of the steel city has been received from the Ontario government, and it will probably be confirmed this week.

#### **Adopts New Government.**

Traverse City, Mich.—At a special election the city voted to adopt the commission form of government, the vote being 1,025 yeas and 217 nays. The new charter will go into effect May 15.

#### **Municipal Ownership Failure at Middleboro.**

Middleboro, Mass.—After twenty years of municipal ownership of the electric and gas lighting plants, the voters, after a stormy session, voted to appoint a committee to get a proposition from the Brockton Edison Company for furnishing lights and power to the local consumers. George Fox Tucker, a Boston attorney, living in Middleboro, claimed that the total liabilities of the plant to date are over \$200,000 and that last year 10 per cent. was lost on the gas plant alone.

#### **Board of Purchase for City Supplies.**

New York, N. Y.—Comptroller Prendergast has made public a report which he will submit for the consideration of the Board of Estimate and Apportionment at its next meeting, outlining a plan for centralizing the purchase and distribution of all supplies required by the City of New York and requiring the organization of a Board of Purchase, which shall consist of the Mayor, the Comptroller and the President of the Board of Aldermen. This plan does not contemplate the elimination of any of the departmental purchasing agents, as it is appreciated that their expert knowledge of the requirements of their respective departments is a valuable asset. The unification of all purchases, however, will secure economy and efficiency in buying, inspection and audit. The report states that millions of dollars worth of supplies are purchased annually by the various departments at practically retail prices. The inefficiency of present methods will be emphasized when the Municipal Building in Park Row is occupied. There will then be under one roof forty-eight purchasing officials, each engaged in buying practically the same kind of articles. Supplies, it is contended, should be purchased at wholesale prices or less. The Board of Purchase will have the power to appoint a general purchasing agent and a general storekeeper, both of whom shall hold office during good behavior and shall be removable only upon proven charges. The proposed new system, while a radical change from existing methods, is no untried experiment. It has been developed, after careful study, from the purchasing system of one of the great transcontinental railways, which purchases annually four times as many supplies as the City of New York.

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## **STREET CLEANING AND REFUSE DISPOSAL**

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#### **Clean-Up Campaign at Hico.**

Hico, Tex.—Hico has been engaged in the most thorough clean-up campaign that has ever been known in the city. Nearly every citizen has co-operated in the work, and when the work is completed Hico will be one of the cleanest towns in the state. Additions to the sewerage system are about complete.

#### **City to Have Spring Clean-Up.**

Salt Lake City, Utah.—The Health Department is getting ready for the annual spring clean-up of the city. A preliminary clean-up is already under way, but the work will be taken up on a city-wide basis at once and continued until the entire municipality is made spick and span. While no special clean-up day has ever been inaugurated by the



Health Department, it has been the custom of the department to gather up and haul away all refuse and garbage gathered by residents and set out for the garbage man in tin cans. Usually from one to three weeks have been given over to this work in addition to the regular garbage disposal, and the results have been found highly satisfactory. This season the Health Department did not have to call upon the people to start the cleaning-up process. The residents, especially those on the west side of the city, inaugurated the work themselves. Chief Inspector Flynn proposes to inaugurate his scheme used last year in getting vacant lots cleaned. Last year Mr. Flynn organized the boys of each district bordering on a dirty vacant lot into baseball teams and got them to clean up the lots and prepare them for baseball grounds. This work done, he supplied the boys with balls and bats.

#### Oiling Streets Saves Heavy Sprinkling Expense.

Oakland, Cal.—The extensive oiling and latest scientific treatment of street surfaces used in the city during the last year will result in a saving of more than \$10,000 to the Street Department through the elimination of ten street sprinklers. Thirty-five sprinklers will be all that will be required this year, though 45, costing the city on an average of \$10 each daily, were used last year. During the present year many more miles of streets will be oiled. This method not only eliminates the dust, thus abolishing sprinkling, but also kills the growth of weeds and makes sweeping unnecessary. Last year the city paid \$30,000 for water, most of which was used in street sprinkling.

#### Cleaning Up Town.

Larned, Kan.—From now till April 14 the small boys of the city will busy themselves gathering tin cans and other rubbish from the yards and alleys into piles. The Business Men's Association has offered prizes for the largest piles, and the boys are setting to work in earnest. Five local ministers will pass judgment on the size of the piles on April 14 and award the prizes.

#### Tyler Clean-Up Days Designated.

Tyler, Tex.—Judge B. B. Beaird, Mayor, has issued a proclamation designating four days of next week as clean-up days for Tyler. The proclamation was issued at the instance of the Commercial Club and the Federation of Women's Clubs, and these organizations will aid and cooperate with the city officers in the work. Judge Beaird will convert all the city wagons into trash wagons and keep them in service throughout the cleaning up process.

#### Clean Up Streets of Tifton.

Tifton, Ga.—On the day set by the women of the Twentieth Century Club as annual clean-up day, as ordained by the State Federation of Women's Clubs, rain fell and prevented the work. The following day, fair, with gangs of laborers assigned to each ward, with two determined members of the club in charge of each gang, every street, and every alley in each ward was fine tooth combed.

#### Offers Over \$2,000 for City Refuse.

Wilmington, Del.—A Newark firm, D. Laprete, a wholesale bottle dealer, has offered the Street and Sewer Department of Wilmington more than \$2,000 for the privilege of collecting the broken glass and tin cans from the city dumps. Heretofore the city has never derived any revenue from the ash heaps, and the refuse has been picked up by anyone who cared to do so for the bottles, etc., that they might gather. The board seemed to favor Mr. Laprete's proposition, as it will bring in quite a large sum to the city for practically nothing on its part.

#### Suggest Purchase of Auto Truck for Garbage Collection.

Niagara Falls, N. Y.—The Board of Public Works is planning for a more economical and efficient arrangement for the collection of garbage. Last year the cost of garbage collection amounted to \$24,000, while the collection of ashes cost the city \$17,000. Under present arrangements 28 collecting wagons are in use, 11 of which are owned

by the city. It costs the city approximately \$8 a day for each wagon, including the team and men employed on them. The capacity of these wagons ranges from 4½ to 5 cubic yards. They collect about four loads per day. Commissioner Colpoys suggested purchasing auto trucks as an experiment, and a committee was appointed to investigate. The committee will attend the auto show at Buffalo to witness demonstrations of trucks. Commissioner Colpoys thought auto trucks would furnish a solution of the problem, in that one truck would carry five times as much as a wagon, and could cover more territory.

## RAPID TRANSIT

### Plans Construction of Electric Belt System.

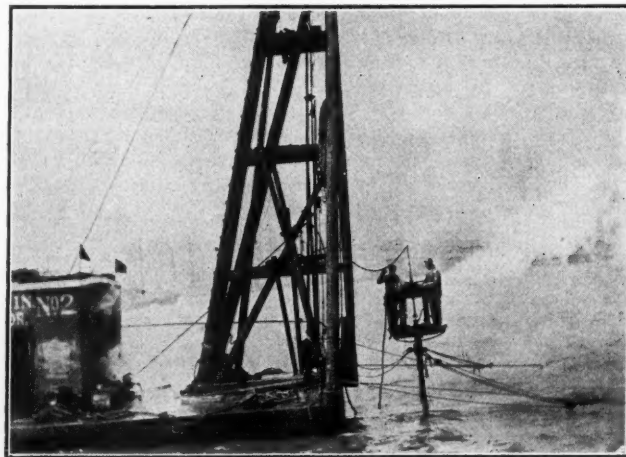
Edmonton, Alberta.—Inspector Moir's plan to build a belt system of 110 miles of electric railway lines in Edmonton was adopted by unanimous vote of the last meeting of the City Council, Mayor George S. Armstrong presiding. Two hundred and twenty cars will be required to equip the entire system. Under this plan, which is subject to several slight modifications, every building site in the corporate limits will be within three and a half blocks of a car line. Commissioner Chalmers announces that at least eighteen miles of lines will be built during 1913, work to begin early next spring.

### Designs Submitted for New Electric Cars.

Los Angeles, Calif.—Designs for street cars to be submitted to the Los Angeles Railway Company in considering the purchase of new equipment, have been prepared by engineers for the board of public utilities. Among the several types suggested one met with special approval by the board. The type which seemed to meet with most favor from the board members is of the center entrance type. One exit is provided at the center and still another at the front. The front exit will be used by those occupying the front open section and the center exit by those in the rear, as a rule. Instead of three 13-inch steps to reach the floor of the car as in the present type, the new design will have two. The floor of the car slopes two inches from the entrance to the middle of the floor and eight inches from the center towards either end. The conductor stands at the center and the motorman at the front right-hand corner, about the same as in the center entrance car the company now has in service.

### Making Test Borings Under East River.

New York, N. Y.—In order to ascertain the character of the soil and rock in the line of the proposed rapid transit subway tunnels connecting Manhattan and Brooklyn, it was necessary to make extensive test borings. The illustration shows the method employed by the Healey Contracting Co., Park Row Building, New York, who are experts in diamond drilling. A scow equipped with boiler supplies the power. The two men on the platform at the right in the illustration are changing a drill rod.



DRILLING TEST BORINGS FOR NEW YORK RAPID TRANSIT SUBWAY TUNNEL UNDER EAST RIVER.

## MISCELLANEOUS

### Baseball Park Owned by City.

Dubuque, Ia.—Dubuque has the very latest thing in league baseball—a municipally owned ball park. The city has donated the site on the river front for the use of the Three-Eye league team, which makes Dubuque its headquarters. The city has given \$1,000 for grading and the rest of the financing will be looked after by the Three-Eye interests and public spirited citizens.

### Mayor Shank Going on Vaudeville Stage.

Indianapolis, Ind.—Beginning the first of next year, Mayor Samuel Lewis Shank will do his "potato selling" and "mayoring" from a vaudeville stage. The Mayor has signed a contract with a large vaudeville circuit to do a monologue at \$500 a week. The Mayor was a candidate for the nomination of Governor before the Republican State Convention, but was defeated. "Since I couldn't get to be Governor," said Mayor Shank, "I guess going on the stage is the next best thing."

### Improvements at Niles.

Niles, O.—This will be a banner year for improvements in Niles if all the work that has been projected, and even contracted for, is done. No fewer than seven jobs of paving are to be done the coming summer and a mile and one-half of sewers are planned. The sewer improvements will about complete the work of this kind needed in the built-up section of the city. Materials are being hauled for the North Main street paving and the job will be started as soon as the ground will permit. City Engineer Brewer is busy preparing assessing ordinances for the five streets that are to be paved.

### City Planning Expert at Work in Syracuse.

Syracuse, N. Y.—C. E. Howard, of Chicago, who for a year and a half has been at work on the aesthetic arrangement of the grounds of the Panama-Pacific Exposition in San Francisco, is in Syracuse to study the possibilities of developing a city plan for Syracuse. Coincident with Mr. Howard's arrival, Albert L. Brockway of the City Planning Committee of the Chamber of Commerce submitted to Mayor Edward Schoeneck the proposed bill providing for the creation of the Syracuse City Planning Commission as a new department of the municipal government. Mr. Howard comes under an arrangement with the City Planning Committee, but it is expected that his work will greatly facilitate the adoption of a permanent city plan by the new city commission in case the legislative measure is adopted. Three weeks will be spent by Mr. Howard in a study of the problem of how the orderly and sightly development of the city can be promoted along rational lines. He will be the guest of Mr. Brockway. Both were students at the Academie des Beaux-Arts in Paris. The new city plan will differ from that made by George W. Kessler of Kansas City, which related more particularly to the establishment of a park and boulevard system. Mr. Howard's work will have a much broader scope, as suggested by the provisions of the bill for a City Planning Commission.

### City May Own Telephones.

Marquette, Mich.—By a unanimous vote the city council has adopted a resolution for the appointment of a committee to consider the feasibility of a municipal telephone system. The city already operates its own electric lighting system and has poles in every street. The present movement represents, to some extent, the dissatisfaction of some persons with the new policy of the Michigan State Telephone Company in requiring quarterly payments in advance for its service and cutting out telephones, when patrons have refused to pay on that basis. Some local lawyers question whether under the state constitution the city can introduce a telephone installation of its own and whether the law that gives the railroad commission control over the telephones in this state would permit a municipal experiment of this sort. Nevertheless there is

strong local sentiment in favor of city-owned telephones, especially since city management of the electric and water supply has been successful. A thorough investigation of the matter will be made.

### Municipal Building Ready for Occupancy in October.

New York, N. Y.—The fact that the new Municipal Building in Manhattan will not be ready for occupancy until October 1, instead of May 1, as anticipated, will cost the city close to \$500,000 for the re-renting of old quarters by city departments, it is figured. This is because most of the leases expire in May, and the landlords will not accept anything under a year's lease. Borough President McAneny of Manhattan has taken a strong stand, however, against this. He says that he will recommend to the Sinking Fund Commission, which makes the leasing arrangements for all city offices, that temporary quarters be sought in buildings where payment will be made on the basis of the time of actual occupancy. Bridge Commissioner Arthur J. O'Keeffe, whose department has charge of the furnishing of the Municipal Building, claims that there is no delay in the work, as the original specifications called for it being ready for occupancy in the fall. City officials anticipated it would be finished ahead of time, however, he declared. In the meantime Brooklyn's municipal building and Brooklyn's court house are being held up until the city decides whether it can afford the money to devote to them.

### To Raise Trees.

Syracuse, Kan.—A unique method of raising trees along street parkings has been devised here. It is proposed to plant trees in a series of small ponds. The pond beds will be made symmetrical and trimmed with cement for beautification. It is thought sufficient water will collect in the ponds from rains during most of year to water the trees.

### To Enforce Curfew Law.

Gloucester, Mass.—The city council voted to enforce the curfew law which, although it has been in effect for a number of years, has never been observed by the police. The action is a result of an effort on the part of Mayor Foster to clear the streets of all girls and boys under 16 years of age by 9 o'clock every night when the curfew whistle is sounded. The Mayor, in addressing the council when the matter came up, demanded that the police enforce the law.

### City Market May Be Established at Ithaca.

Ithaca, N. Y.—A committee of five farmers from nearby towns was appointed at a special meeting of the industrial commission to discuss among themselves and with the housewives of the city the advisability of starting a city market. As soon as the committee is ready to render its report a special meeting of the commission will be called to take definite action. The committee consists of G. H. Hook, Edward Wallenbeck, H. S. Wright, E. M. Rumsey and Nelson Hopper.

### Munich Plans for Workman Savings.

Munich, Bavaria.—To reduce the demands on the municipal treasury from unemployment, the Munich town council is discussing a proposal requiring employers to deduct a fixed sum from wages to be paid in to savings bank accounts for their workmen. Statistics show that 60 per cent. of the unemployed recently relieved belong to the building trades, from which high wages are derived in the summer time.

### Beautifying Forsyth.

Forsyth, Ga.—With a view to beautifying the appearance of the little city, the Mayor and aldermen of Forsyth are making arrangements to place shade trees on such of Forsyth's streets as are without trees at present. For the past two months the city has been enlarging the streets, getting the sidewalks in shape and as a finishing touch is to plant the shade trees along the edges of the sidewalks.



## LEGAL NEWS

### A Summary and Notes of Recent Decisions— Rulings of Interest to Municipalities

#### Limitation of Indebtedness.

*Paterson v. City of Edmonds et al.*—An indebtedness may properly be created by a city in excess of the constitutional debt limit for the expense of holding city elections, for the salaries of necessary municipal officers, and for supplies necessary to carry on the city government.—Supreme Court of Washington, 129 P. R., 895.

#### Openings in Streets.—Power to Regulate.

*City of Buffalo v. Stevenson.*—A municipal ordinance requiring property owners to obtain a permit from the department of public works before opening streets for the purpose of laying gas, sewer, or water pipes and imposing a fee of \$5, the amount of such fees to be credited to a fund for the repair of streets, was an exercise of the police power, and not of the taxing power.—Court of Appeals of New York, 100 N. E. R., 799.

#### Board of Education.—Relation to City.

*Titusville Iron Co. v. City of New York et al.*—In view of Greater New York Charter providing that for the purposes of this chapter the board of education of New York City shall possess the powers and privileges of a corporation, the board of education is a corporation distinct from the city, so that the relation of principal and agent does not exist between the two, and the city is not liable for the torts of the board.—Court of Appeals of New York, 100 N. E. R., 806.

#### Streets.—Vacation.—Remonstrance.

*Southern Ry. Co. of Indiana v. Town of French Lick et al.*—Under Burns' Ann. St. 1908, which authorizes proceedings to vacate a street and remonstrance against the same, the right of remonstrance is not limited to persons owning property abutting on the part of the street sought to be vacated, since other owners on the street may be injuriously affected.—Appellate Court of Indiana, 100 N. E. R., 762.

#### Obstruction of Stream.—Damages.

*Cook v. Village of Mohawk.*—In action against a village for obstructing a stream and causing it to overflow plaintiff's premises, testimony that a member of defendant's sidewalk committee said that the village would pay for any damage caused thereby was incompetent; he having no authority to bind the village by such a statement.—Court of Appeals of New York, 100 N. E. R., 815.

#### Competitive Bidding.—Necessity Of.

*Price v. City of Fargo et al.*—Where bids are requested, but there is no law requiring competitive bidding, nor that the contract be let to the lowest bidder, such contract need not be let to the lowest bidder, and where it is awarded to a higher bidder, a taxpayer cannot have the contract set aside where there is no proof of fraud.—Supreme Court of North Dakota, 139 N. W. R., 1054.

#### Street Opening.—Expert Evidence.

*City of Portland v. Tigard et al.*—Expert witnesses may give their opinions as to the increase in the market value of a lot by reason of a street improvement, and are not limited to giving their opinion of its value before and after the improvement.—Supreme Court of Oregon, 129 P. R., 755.

#### Defective Sewers.—Damages.

*City of Ardmore v. Orr.*—The owner of a lot sued a city for damages resulting from the negligent construction of sewers inadequate to carry off storm and surface waters which the city had by grading its streets, diverted from their

usual course, and brought to a point near plaintiff's property. The volume of waters, being too great to be discharged through the sewers provided, were forced back upon plaintiff's property, thereby damaging and destroying certain personal property, and rendering less suitable for business the buildings thereon. The defect in the sewers being remedial by expenditure of money and labor, it was error for the court to authorize the jury by its instructions to consider as an element of plaintiff's damages future loss of rents and depreciation in the value of the real estate.—Supreme Court of Oklahoma, 129 P. R., 867.

#### Garbage Collection.—Nuisance.

*Bell et al. vs. Mayor, etc., of City of Savannah.*—Although municipal authorities may have plenary power in the matter of collection, removal, and disposition of garbage, yet they cannot lawfully create in connection therewith a nuisance dangerous to health or life; and, when necessary and proper, a court of equity will, at the instance of a citizen suffering special injury therefrom, enjoin against the maintenance of the same.—Supreme Court of Georgia, 77 S. E. R., 165.

#### Performance of Contracts.—Acceptance.—Effects.

*Hutchinson et al. v. City of Spokane et al.*—Where a contract for a street improvement vested in the board of public works and city engineer the power to determine all questions relating to its performance, and the contract was substantially complied with, the decision of those officials that the work was properly performed was final and concluded all interested parties.—Supreme Court of Washington, 129 P. R., 892.

#### Park Lands.—Corporate Purpose.

*City of Quitman v. Jelks & McLeod.*—The acquisition of land by a municipality for the establishment and maintenance of a public park is for a "corporate purpose."—Supreme Court of Georgia, 77 S. E. R., 76.

#### Action for Violation of Ordinance.

*City of Ottumwa v. Scott.*—An action authorized by Code Supp. 1907 to recover poll tax imposed by an ordinance of a city, authorizing cities to require male residents to perform work on the street or in default thereof to pay a specified sum, is an action based on a violation of an ordinance within the Code, conferring on police courts jurisdiction of "actions" or "prosecutions" for violations of city ordinances; and a section limiting municipalities to the imposition of fine and imprisonment for the enforcement of ordinances, does not obviate the conferring by the legislature of power to enforce obedience by civil action—the words "actions" and "prosecutions" contemplating criminal and civil actions.—Supreme Court of Iowa, 139 N. W. R., 901.

#### Street Boundary.

*Bridges et al. v. Incorporated Town of Grand View et al.*—Where a town acquiesced in the building of houses, erection of porches, laying of sidewalks, construction of fences and general improvements made with reference to a given line which corresponded to the similar line in the next block and the removal of such part of the improvements as interfered with the establishment of the true line, would render the premises unsightly and cause great damage, the town was estopped from establishing another line as the true line.—Supreme Court of Iowa, 139 N. W. R., 917.

#### City Hall.—Installation of Cells.

*Champion Iron Co. v. City of South Omaha (No. 16,900).*—The installation of cells in a "city hall," to be used in connection with a police court held in the building is incidental to, and not inconsistent with, the general purpose for which such a building may be erected. It is impossible to lay down an exact definition of the term "city hall." If separate buildings for different departments of city administration are erected upon the same site, so related to each other and to the main structure as to form practically a part of the same general plan, each of the buildings would be authorized by a vote conferring power to issue bonds "to purchase a site and erect a city hall thereon."—Supreme Court of Nebraska, 139 N. W. R., 848.



## NEWS OF THE SOCIETIES

### Calendar of Meetings.

April 3-5.  
AMERICAN ELECTRO-CHEMICAL SOCIETY. Annual Meeting, Atlantic City, N. J. J. W. Richards, Secretary, South Bethlehem, Pa.

April 15-16.  
TRI-STATE WATER AND LIGHT ASSOCIATION OF THE CAROLINAS AND GEORGIA.—Annual Convention, Charlotte, N. C. J. W. Neave, Secretary, Salisbury, N. C.

April 18.  
UTAH SOCIETY OF ENGINEERS.—Annual Meeting, Salt Lake City, Utah. R. B. Ketchum, Secretary, 702 Newhouse Building, Salt Lake City, Utah.

April 18.  
DETROIT ENGINEERING SOCIETY. Annual Meeting, Detroit, Mich. F. H. Mason, Secretary, 614 Moffatt Bldg., Detroit, Mich.

April 18-20.  
SOUTHERN GAS ASSOCIATION. Annual Meeting, Charlotte, N. C. E. D. Brewer, Secretary, Atlanta, Ga.

April 24-26.  
IOWA STREET AND INTERURBAN RAILWAY ASSOCIATION. Annual Convention, Waterloo, Ia. H. E. Weeks, Secretary, Davenport, Ia.

May 5-7.  
NATIONAL CONFERENCE ON CITY PLANNING.—Annual Meeting, Chicago, Ill. Flavel Shurtleff, Secretary, 16 Congress Street, Boston, Mass.

May 6-8.  
GAS, ELECTRIC AND STREET RAILWAY ASSOCIATION OF OKLAHOMA.—Annual Convention, Oklahoma City, Okla. H. V. Bozell, Secretary, Norman, Okla.

May 6-10.  
PLAYGROUND AND RECREATION ASSOCIATION OF AMERICA.—Annual Meeting, Richmond, Va.—H. S. Braucher, Secretary, 1 Madison Ave., New York City.

May 12-14.  
SOUTHWESTERN WATER WORKS ASSOCIATION.—Second Annual Convention, Fort Worth, Tex. E. L. Fulkerson, Secretary.

June 23-28.  
INTERNATIONAL ROADS CONGRESS.—Third Congress, London, England. W. Rees, Jeffreys Secretary, Queen Anne's Chambers, Broadway, Westminster, London, S. W.

June 23-28.  
AMERICAN WATER WORKS ASSOCIATION. Thirty-third Annual Meeting, Minneapolis, Minn. John M. Diven, Secretary, 47 State street, Troy, N. Y.

### City Club of New York.

The club gave a dinner, March 10, in honor of "Expert Administrative Service." Invited as its guests of honor were thirty-one men, who, for at least five years have given faithful expert service, either administrative or technical to the City of New York.

This list of thirty-one was varied from Health Commissioner Lederle, described as a "man known in every city in the land," to John J. Kelly, a master at bookkeeping in the Controller's office, whose voice is "never heard above the rumble of city business." Man by man, President Strong named them and gave to each a paragraph of appreciation and each name was roundly applauded by the 150 guests.

There were President Lawson Purdy, of the Tax Board and General Theodore A. Bingham, of the Department of Bridges. There were Dr. Hermann M. Biggs and Dr. Walter Benschel, of the Health Department, and John S. Billings and John S. Billings, Jr., one the head of the library system, one an important factor in the health service of New York.

For Superintendent William H. Maxwell, President Strong, of the City Club, needed to go no further than a reading from the Hanus report. Lengthy service was recorded there, too, for Joseph Haag, secretary of the Board of Estimate, who has been in the city employ since 1870, and Dr. Henry M. Leipziger's service has been only two years shorter. There was the sort of contrast shown in the names of Assistant Corporation Counsel Theodore Connolly, who had no other client than New York for thirty years; to John T. Fetherston, sanitary engineer, who has made such a science of the disposal of refuse out in Richmond that Chicago tried very hard, but vainly, to get him.

Others in the thirty-one were Chief Engineer Lewis and Chief of the Bureau of Franchises Nichols from the Board of Estimate, Chief Engineer Smith of the Board of Additional Water Supply, Chief Clark and Auditor Beardsley and Dr. Daniel D. Jackson of the Department of Water Supply; Benjamin F. Welton and Otto H. Klein, engineers of the Commissioner of Accounts office; Charles S. Hervey, Robert F. McIntyre, Duncan McInnes, Daniel F. Moynahan, and Chandler Withington of the Department of Finance; Assistant Corporation Counsel McGoldrick, George W. Tillson and M. L. Fouquet, from the office of Borough President Steers in Brooklyn, Park Commissioner Kennedy of Brooklyn, Chief Examiner Ireland of the Municipal Civil Service Commission, and Chief Examiner Boyle from the office of President Mitchel of the Board of Aldermen.

Dr. Finlay, after counting the list of thirty-one and finding that he was not one of them, concluded that he was asked to represent the other 80,000 in the city's service. He said that one in every thirty was in the city employ, and many of the Thirtieth Men served the employer so well that the time was fast passing when the comic journals might successfully jest about the laziness of the public servant.

### Engineers Society of Western Pennsylvania.

The technical paper read before the members of the Society at the regular monthly meeting, March 18, was "Electrical Precipitation of Suspended Particles." Linn Bradley, engineer of the Research Corporation, was the speaker. About one hundred and fifty members were present. The paper presented a review of the Cottrell processes for removing suspended particles from gases by means of high tension electric current. A demonstration of some of the principles of the processes was given by the speaker after the reading of the paper, and features of the past activity and present installations were described and illustrated by means of lantern slides.

### Missouri Association of Highway Engineers.

The sixth annual meeting was held at the Planters Hotel, St. Louis, Mo., March 6. About one hundred members attended the meeting which was the first ever held in St. Louis. Mayor Frederick H. Kreismann welcomed the engineers in the forenoon. Alfred Riske, vice-president of the organization and county surveyor of St. Charles County, spoke on "The County Surveyor, Duties and Difficulties," and Dennis M. Scivally of Cape Girardeau County, on "Location, Construction and Maintenance of Earth Roads."

Other addresses were as follows: Tyler Paine of the state highway engineer's offices on "Highway Culverts and Drainage"; F. J. Kersting, "Bridges, Steel, Concrete and Wood"; Judge Hugh C. Gilbert of Jackson County Court, "Construction and Maintenance of Macadam Pavement"; Eugene Harding of Sole County, "Bituminous Binders for Macadam Pavements"; L. M. Stallard of St. Joseph, Mo., president of the association, "Organization of County Highway Department, Relation Between County Court and Highway Engineer." John H. Gundlach, president of the City Council and vice president of the City Plan Commission gave an illustrated lecture on "City Planning."

The officers of the association are: L. M. Stallard, St. Joseph, president; Alfred Riske, county surveyor of St. Charles County, vice president, and J. E. Warner, Benton, Mo., secretary.

### Vermont Society of Engineers.

The first annual convention was held at Hotel Vermont, Burlington, March 7. Officers were elected as follows: President, C. S. Carleton of Northfield; vice-presidents, D. Williams of St. Johnsbury and A. C. Green of Rutland; secretary, George A. Reed of Barre; treasurer, A. E. Winslow of Northfield; directors, H. M. McIntosh of Burlington; W. H. Voice of St. Albans and B. M. Hayward of Montpelier. Twenty new members were admitted during the year and there are some still to be acted upon. The total membership is now 60.

President F. O. Sinclair made an address on the engineer's place in the community and his duties in connection with the conservation of natural resources. Papers were read by A. G. Chapin on "Hydro-Electric Engineering"; Prof. Walter L. Upson on "Transition Points in Electrical Engineering"; W. H. Voice a "Review of Industrial Application of Electro-Chemistry."

### Road Supervisors Association of Washington County.

The eighth annual convention was held at Washington, Pa., March 11. Wm. J. McLafferty, Donegal, was elected president and Joseph E. Day, Morris township, secretary and treasurer.

Attorney James P. Eagleson appeared before the supervisors with a letter from Jonathan Bourne, Jr., of Ore-

gon and chairman of the joint committee on Federal Aid in the construction of post roads. This committee desired information on this line, and the supervisors voted unanimously in favor of post roads. Mr. Eagleson is to make a report on the questions submitted and will ask expressions from the taxpayers on the following questions:

1.—"Should the Government make appropriations in aid of public roads?"

2.—"On what roads should the first Government appropriation if made, be expended; (a) all roads; (b) post roads (R. F. D. and star routes) (c) main traveled market roads; (d) main highways connecting important cities and town in State; (e) trunk line, interstate highways, connecting state capital and large cities?"

3.—"Should the Government appropriation be expended on construction, on maintenance, on general improvement, or on any or all of these, or should the allotment by the Government be unconditional, or paid as a reward after local authorities have constructed or maintained a highway in good condition?"

4.—"What proportion of cost of construction improvement or maintenance should be borne by National Government, state, county, road district, and abutting property owners, respectively, or what amounts should be allotted to the states on an unconditional plan, or what amounts per mile should be paid as rewards?"

5.—Should the Federal appropriation be apportioned among the states on basis of population, area, mileage of roads, mileage of rural and star routes, taxable valuation, or a combination of these?"

6.—"Should the supervision of construction or maintenance of Government aided roads be by the Federal Government, the state and local authorities, or jointly?"

## PERSONALS

Lecoq, Conrad J., New Roads, La., has been appointed chief of the Fire Department.

Lesert, Judge Oscar, has been reappointed as President of the Appeal Tax Court of Baltimore. He has served in the court since 1901 and has now received appointments from five successive mayors. In December he was nominated to the postmastership of Baltimore by President Taft, but failed of confirmation owing to the deadlock in the Senate.

McBurnett, Jesse, Pine Bluffs, Ark., has been appointed chief of police.

Oddy, H. C., Washington, D. C., formerly secretary of the district electric commission, has been appointed engineer of the new Public Utilities Commission of the District of Columbia.

Riley, Michael, Wareham, Mass., has been appointed chief of the Fire Department.

Swisher, James, Springfield, O., has been made chief inspector of the city engineering department.

## MUNICIPAL APPLIANCES

### Safety Steel Taped Cables.

The Safety Insulated Wire & Cable Co., 114 Liberty street, New York, manufactures under the trade name Safety, steel taped cables for underground service where there are no ducts. In the case of ornamental street lighting systems they afford a reliable and economical method of installing wires.

These cables are composed of any desired number of conductors, which are insulated with a high grade seamless rubber compound by a special process. Next comes rubber tape, outside of this a layer of jute and then tape again. A lead cover encloses this structure, which in turn is protected by a layer of jute, armored with two layers of special steel tape and then treated all over with asphalted jute. The construction is analogous to submarine cable. No condition of service, it is claimed, is too severe for its use.

The method of installation is simple and some variety in details is permissible. A narrow strip of pavement is generally taken up and a trench dug into which the cable is dropped and the street resurfaced. If the street is paved with blocks of any kind, one or two rows may be removed and the cable laid about three inches below the bottom of the blocks. The space is filled with sand and the blocks relaid. Another method quite extensively used is to take up one course of blocks next to the curb, drop the cable in and fill up the space with concrete. Sheet pavements similarly may be cut and filled with concrete. At the

lighting posts, the cable is brought up under the curbing, through a hole cut in the sidewalk and thence to a cut-out located in the base of the post. Another way is to cut a channel in the stone or concrete walls about two inches deep and wide and, after the cable is inserted, fill it with concrete and finish it off. Wherever there is a boulevard or grass plot between the sidewalk and curb it is best to lay the cable there.

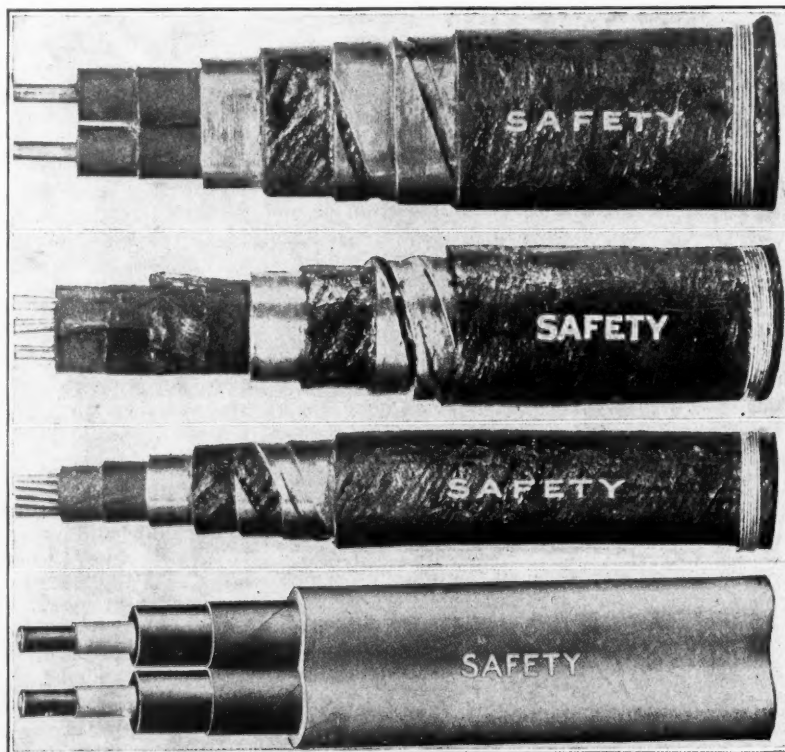
The use of Safety steel taped cables is not limited to ornamental lighting, but is suitable for any service. It is a particularly good proposition for suburban and park lighting systems.

For use where duct systems are available the Safety Insulated Wire & Cable Company makes a plain lead covered cable, shown in the lower illustration.

### Metropolitan Auxiliarized Fire Alarm Box With Sub-Stations.

The Star Electric Company, Binghamton, N. Y., makes a modified form of their Metropolitan fire-alarm box for use where it is desired to operate a box from one or more distant points. This type of box called the CX, seen in the illustration, has all the advantages of the regular Metropolitan boxes.

The auxiliary stations are equipped with three styles of outer doors, as shown in the illustration. Style F glass panel door which is provided with a ring covered by a glass panel, so that when the glass is broken the ring may be pulled down and thereby set in motion the Metropolitan box



TWO AND THREE CONDUCTOR SAFETY CABLE—STRAINED CONDUCTOR FEEDER CABLE—LEAD COVERED CABLE.



connected with it. Style K, self-tripping, glass-panel-door auxiliary station, which is so constructed that when the glass is broken it automatically causes the Metropolitan box connected with it to transmit its signal. Style P, self-tripping, trap lock door auxiliary station, which is so constructed that when the key is placed in its slot in the door and turned to the right as far as it will go, the key is trapped in position and the Metropolitan box connected to the station is automatically tripped. All these auxiliary stations are so built the door may be opened by an official having proper key, without breaking any glass or transmitting any signal.

While Star auxiliary-master boxes and auxiliary stations may be used in connection with any of the several

systems of wiring, they have the unique advantage of being adapted for use without employing terminal sets and local batteries. These terminal sets add to expense and add a factor of uncertainty to the entire installation.

It will be noticed on referring to the illustration of the CX box that an opening has been provided through the inner door for a target carried by clock work, through which an indicator with the words "not set" will be shown unless the wires and auxiliary stations connected with the box are intact. Hence an inspection will show whether the box is in condition to respond to all its auxiliary stations.

The glass guard outer panel door of the Metropolitan box is a distinctive Star feature. This glass door simplifies the operations necessary for sending in an alarm, and enables any citizen passing the box to stop and learn just how to send an alarm.

#### Horse-Drawn Lawn Mower with Demountable Cutter Unit.

The Coldwell Lawn Mower Company, Newburgh, N. Y., make a horse-drawn lawn mower with a demountable cutter unit which is said to be constructed upon an entirely new principle and to be a wide departure from anything of the kind ever made. The cutter section, which is the vital part of a lawn mower, is made into a unit and is independent and removable from the main frame of the mower. This unit consists of a simple frame containing the revolving cutter, the bottom or stationary knife and parts necessary for adjusting the

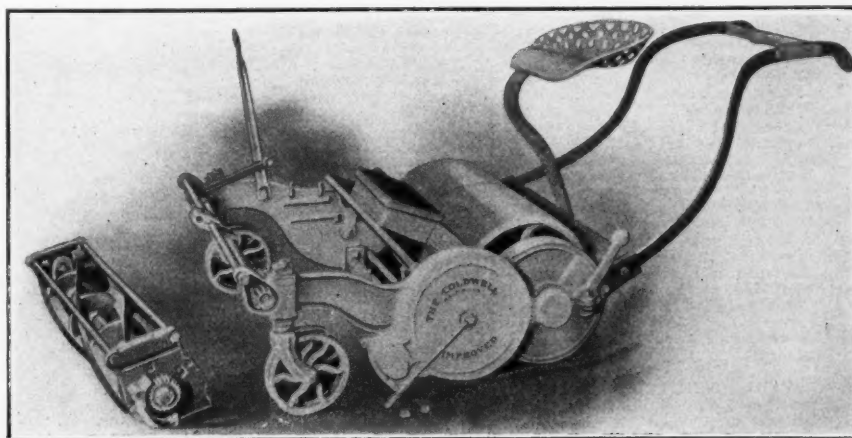


STAR AUXILIARIZED MASTER BOX AND THREE TYPES OF STATION BOXES.

same to each other. It is attached to the main frame of the mower by four locking screws and can be attached or removed in less than a minute. It being separate and independent of the main or larger frame, it relieves the knives from the twisting and strain that usually occurs in the frame of the ordinary horse mower when in use on rough ground.

This unit, being the cutter section of the mower, is the only part necessary to send in to the factory for sharpening or adjusting. The great convenience in handling will be appreciated by all users of horse mowers.

Some of the details of the machine are as follows: Diameter of drive rollers, 15 inches; gears, external, front drive; ratchets, double triple pawl between rollers; diameter of revolving cutter, 7 inches; number of blades, four or six; bearings, adjustable.



HORSE-DRAWN LAWN MOWER WITH DEMOUNTABLE CUTTER.

## INDUSTRIAL NEWS

**Cast Iron Pipe.**—Chicago. Municipal improvements calling for large-sized pipe are not as numerous this year as last. These, of course, are the orders that call for large tonnages. However, a large number of small towns are in the market for sizes of 16-inch and less. Prices have been reduced \$50 per ton. Quotations: 4-inch, \$29.50; 6- to 12-inch, \$27.50; 16-inch and up, \$26.50. Birmingham. Prices for larger sizes are being cut but those for small sizes maintained. Quotations: 4-inch, \$23.50; 6-inch and up, \$21.50. San Francisco. The movement is still light but foundry agents are confident of a good tonnage in the next six months and several inquiries are expected at any time. New York. Private buying has increased. Inquiries and orders are satisfactory to the manufacturers. However, a tendency among buyers to greater conservatism is notable. Quotations: 6-inch, car loads, \$24 to \$25.

**Lead.**—Market is quiet and dull with an undertone of strength. Quotations: New York, 4.35 c.; St. Louis, 4.20 c.

**Fire Apparatus.**—The Northern Fire Apparatus Company of Minneapolis has recently reorganized the sales department of its business. G. P. Williamson has become identified as a member of the firm, and will assume the active management of sales. Mr. Williamson is an experienced apparatus man and in addition has served an extended period in sales management. The Northern Company has always made a specialty of volunteer department apparatus, and the growth of their business has necessitated this addition to its management.

**Ornamental Lighting Poles.**—The Elmer P. Morris Iron Works, 90 West street, New York City, have furnished ornamental lighting poles as follows: Rochester, N. Y., 170 luminous arc poles; Wildwood, N. J., 50 luminous arc poles; Ocean City, N. J., 40 luminous arc poles; Atlantic City, 326 gas arc poles; Geneva, N. Y., 74 5-light Junger poles; Asbury Park, N. J., 86 5-light Junger poles; New Brunswick, N. J., 10 single light Junger poles.

## THE WEEK'S CONTRACT NEWS

Relating to Municipal and Public Work—Street Improvements—Paving, Road Making, Cleaning and Sprinkling—Sewerage, Water Supply and Public Lighting—Fire Equipment and Supplies—Bridges and Concrete Work—Sanitation, Garbage and Waste Disposal—Police, Parks and Miscellaneous—Proposals and Awards.

To be of value this matter must be printed in the number immediately following its receipt, which makes it impossible for us to verify it all. Our sources of information are believed to be reliable, but we cannot guarantee the correctness of all items. Parties in charge of proposed work are requested to send us information concerning it as early as possible; also correction of any errors discovered.

### BIDS ASKED FOR

STATE	CITY	REC'D UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
<b>STREETS AND ROADS</b>				
O.	Columbus	2 p.m., Mar. 31	Grading road, 5.62 miles, Black River; grading road, 3.33 miles, Wellington; waterbound & bit. concrete, 1.80 miles, Hillian; brick, 2.51 miles, Ruggles.	J. R. Marker, State H. Comr.
O.	Ravenna	Noon, Mar. 31	Brick or asphalt block	W. H. Linton, Dir. P. S.
O.	Columbus	2 p.m., Mar. 31	Waterbound macadam in Cardington, 1.92 miles; brick in Center, .8 mile	Jas. R. Marker, St. Hwy. Comr.
O.	E. Youngstown	Noon, Mar. 31	Grading, paving and draining 12 streets	P. J. Carney, Clerk.
Ind.	Indianapolis	10 a.m., Mar. 31	Culverts	W. T. Patten, Co. Aud.
Fla.	Barrancas	Noon, Mar. 31	Macadam roads, sidewalks, wall	Constrn. Q. M.
O.	Columbus	2 p.m., Mar. 31	Macadam in Miami Twnshp., 4.58 miles. Bituminous concrete in Scioto Twnshp., 1 mile. Bituminous treated concrete in Leroy Twnshp., 2.21 miles. Waterbound macadam in Franklin Twnshp., 2.5 miles.	Jas. R. Marker, St. Hwy. Comr.
Ia.	Burlington	9 a.m., Mar. 31	Cement concrete, three streets	H. B. Vollmer, C. Engr.
Mich.	Kalamazoo	5 p.m., March 31	Brick, 4,000 yds.; asphaltic concrete, 30,000 yds.	C. L. Miller, Clk.
S. D.	Sioux Falls	9 a.m., Mar. 31	Concrete curbing	W. C. Leyse, C. Aud.
O.	Columbus	2 p.m., Mar. 31	Macadam, .53 miles in Clairbourne Twnshp.	J. R. Marker, St. Hwy. Comr.
Conn.	Bridgeport	8 p.m., Mar. 31	Paving 13,270 sq. yds. wood block, asphalt block, brick, bitulithic, stone block & Hassam.	B. Keating, Secy.
Md.	Chestertown	Apr. 1	Section highway	Kent Co. Comrs.
Va.	Danville	Apr. 1	Constructing 6½ miles macadam road, 37½ miles soil.	City Engr.
Wash.	Centralla	Apr. 1	Cement sidewalks, 45,000 sq. yds.; paving, 18,000 sq. yds. and curbing, 8,000 lin. ft.	City Clk.
Iowa	Bloomfield	April 1	Brick, asphaltic concrete and cement, 25,000 yds.	A. B. Welch, Clk.
Ky.	Louisville	10.30 a.m., Apr. 1	Three roads	J. R. Gaines, Co. Engr.
Ill.	Dixon	Apr. 1	Vitrified brick, 30,652 yds. concrete curb and gutter.	B. Grover, C. Clerk.
Pa.	Monongahela	Apr. 1	Brick, 8,000 sq. yds. Cost, \$12,000.	J. A. Morrow, C. Engr.
Ga.	Waycross	7.30 p.m., Apr. 1	Brick, wood, asphalt, bitulithic, 20,000 yds.	B. H. Klyce, C. Engr.
La.	Natchitoches	Apr. 1	Pavement, 20,000 yds.	G. W. Kyle, Mayor.
Pa.	Pittsburgh	10 a.m., Apr. 1	Brick, asphaltic concrete, road oil, calcium chloride.	J. S. Gillespie, Road Comr.
O.	Bellevue	Noon, Apr. 1	Brick or bituminated concrete	John Scullen, Dir. P. S.
N. J.	Saddle River	8 p.m., Apr. 1	Excavating and trap rock, &c.	W. H. Cadmus, Town Clk.
Mont.	Butte	5 p.m., Apr. 1	Brick, 1,912 yds.; concrete sidewalks, 34,300 yds.	P. A. Gow, C. Engr.
Md.	Baltimore	11 a.m., Apr. 1	Vit. block, 13,920 yds.; granite, 16,650 yds.; sheet asphalt, 3,020 yds.; bituminous concrete, 2,600 yds.; vit. block, 2,570 yds.	R. Keith Compton, Chrmn.
N. J.	Jersey City	11 a.m., Apr. 1	Asphalt road oil, 100,000 gals.; asphalt road binder, 85,000 gal.; tar road oil, 100,000 gal.; tar road binder, 30,000 gal.	J. C. Sweeney, Clk. Blvd. Com.
Mont.	Missoula	Apr. 1	Sidewalks and curbs for 1913.	City Clk.
Pa.	Dravosburgh	8 p.m., April 2	Hillside block, 11,240 yds.; concrete sidewalk, 53,600 sq. ft., etc.	S. M. Morrison, Chrmn. Comm.
N. Y.	Schenectady	April 2	Patching 10,000 yds.; re-surfacing 5,000	Bd. of Awards.
Ga.	Washington	April 2	Brick asphalt, bitulithic, wood etc.	Mayor.
O.	Chagrin Falls	Noon, Apr. 3	Paving 2 sts.	H. B. Pughley, Vil. Clk.; W. H. Evers Engr. Co., Cleveland.
Ill.	Chicago	2 p.m., Apr. 3	Roadway, 2,500 lin. ft.	E. A. Smyth, Pres. San. Dist.
Neb.	Freemont	7.30 p.m., Apr. 3	Brick, 3 districts	P. A. Nelson, Chrm. Bd. P. W.
Pa.	York	Noon, Apr. 3	Miscellaneous paving material during year	G. A. Warner, Chm. Hy. Com.
O.	Cincinnati	Apr. 3	Imp. roads	Co. Comrs.
O.	Toledo	Noon, Apr. 3	Asphalt, wood, bitulithic, &c.	F. G. Stockton, Secy.
Ky.	Winchester	8 p.m., Apr. 3	Brick street paving	S. B. Tracy, City Clk.
Va.	Norton	4 p.m., Apr. 3	Macadam, 2 to 3 miles	T. M. Pepper, Mayor.
Ill.	Crete	10 a.m., Apr. 3	Hard roads, 10 miles	S. Rose, Town Clk.
Wis.	Wauwatosa	3 p.m., Apr. 3	Macadamizing several streets	C. R. Chandler, Chrm. B. P.W.
Ind.	Salem	1.30 p.m., Apr. 3	Roads, 12 miles; cost, \$34,000.	G. M. Johnson, Chrm. Comrs.
Ind.	Williamsport	9 a.m., Apr. 3	Gravel road, 7,755 lin. ft.	D. H. Moffitt, Co. Aud.
Ind.	Fowler	1 p.m., Apr. 3	Gravel roads; cost, \$30,000.	W. Mankey, Co. Aud.
N. J.	Bloomfield	8 p.m., Apr. 3	Telford with asphalt binder, 3,300 yds.	R. L. Davis, Secy.
Pa.	Wilkes Barre	Noon, Apr. 3	Vitrified paving block	P. Nielon, Pres. Twnshp.
N. Y.	Yonkers	Apr. 3	Paving two streets	C. Clk.
Ind.	Williamsport	2 p.m., Apr. 3	Gravel roads; cost, \$15,000.	D. H. Moffitt, Co. Aud.
Ind.	Greencastle	11 a.m., Apr. 3	Macadam, 9,615 lin. ft.	C. L. Airhart, Co. Aud.
Fla.	Bartow	Noon, Apr. 3	Macadam	J. A. Johnson, Clerk Comrs.
O.	New Matamoras	Noon, Apr. 3	Vitrified blocks, drainage, &c.	A. B. Huffman, Mayor.
Ind.	Kentland	2 p.m., Apr. 3	Gravel road	S. R. Sibelove, Co. Aud.
Ind.	Newport	10 a.m., Apr. 3	Macadamizing two roads	Roy Slater, Co. Aud.
Ind.	Rockport	2 p.m., Apr. 3	Paving and draining highway	J. T. Stevenson, Co. Aud.
N. D.	Dickinson	8 a.m., Apr. 3	Cement sidewalks and crossings	R. C. Hill, City Aud.
Ala.	Montgomery	Apr. 3	Grading and graveling 6½ miles road	T. H. Edwards, Co. Engr.
Miss.	Tutwiler	Apr. 3	Concrete sidewalks	J. L. Donald, City Clk.
N. J.	Metuchen	8 p.m., Apr. 3	Concrete or blue stone flag sidewalks, 10,000 ft.	H. S. Wilson, Boro Clk.
Miss.	Sanford	Noon, Apr. 3	Earth and sand clay roads, 26 miles.	J. F. Lott, Chrmn. Comrs.
N. J.	Westfield	April 3	Dollarway, 7,500 yds.; macadam, 7,200	A. W. Vars, Twn. Engr.
O.	Warren	Noon, Apr. 3	Repaving 8,400 sq. yds. brick asphalt, creosoted block.	C. L. Craig, Dir. Pub. Serv.
Wis.	Waukesha	Apr. 3	Asphalt macadam, 36,000 yds.	M. R. Butler, C. Engr.
Ia.	Clarence	8 p.m., Apr. 3	Concrete, 7,500 sq. yds.	S. McNeil, Twn. Clk.
Conn.	Wallingford	Apr. 3	Wood, brick, bitulithic, &c., 15,500 yds.	Iowa Eng. Co., Clinton.
Ind.	Center Twp.	2 p.m., Apr. 3	Stone roads	J. E. Martin, Warfield.
Ind.	Delphi	Noon, Apr. 3	Gravel roads	Co. Clk.
Kan.	McPherson	Apr. 3	Brick and asphaltic concrete	M. G. Haun, Co. Aud.
Ind.	Angola	3 p.m., Apr. 3	Pavements, 7,900 yds.	M. Hawkinson, C. Clk.
Ind.	Muncie	10 a.m., Apr. 3	Paving highway	Roy Hirst, C. Clk.
Ind.	Logansport	Apr. 3	Macadam roads	Wm. Sutherland, Chrmn.
Ind.	Crown Point	Noon, Apr. 3	Four gravel roads	J. E. Wallace, Co. Aud.



## BIDS ASKED FOR

STATE	CITY	REC'D UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
Ind.	Fort Wayne	10 a.m., Apr. 9	Approach to bridge	C. H. Brown, Co. Aud.
Ala.	Hamilton	Apr. 10	Two miles gravel road	Marion Co. Comrs.
La.	Shreveport	Apr. 10	Macadamizing & graveling 5 miles road	Caddo Police Jury.
W. Va.	Fairmont	Noon, Apr. 10	Roads, 32.7 miles	J. F. Phillips, Co. Clk.
				J. R. Wilson, Engr., Washing- ton, Pa.
Ind.	Richmond	Apr. 12	Macadamizing 3 miles	Co. Comrs.
Kan.	Leavenworth	Noon, Apr. 12	Concrete culvert	J. A. Hall, Co. Clk.
Neb.	Hastings	Apr. 14	Repaving Second st.	City Clk.
Sask.	Watrous	8 p.m., April 14	Concrete sidewalks, water mains and sewerage	E. Meadows, Mayor.
Tex.	Anderson	2.30 p.m., Apr. 14	Macadam and sand clay road, 38 miles	R. Rikard, Co. Judge.
Mich.	Manistique	2 p.m., Apr. 15	Macadam, 3 miles	J. M. Forshar, Co. Clerk.
Ohio	Shreve	noon, April 15	Brick on concrete	C. Morgan, Clk.
Mich.	Saginaw	May 1	Paving several streets; cost, \$110,000	H. H. Emyer, C. Engr.
SEWERAGE				
N. C.	Charlotte	8 p.m., Mar. 29	Vit. pipe, 14,000 ft. 8 to 18-in., &c.	Josh. Firth, C. Engr.
Ill.	Carlyle	March 29	Vit. pipe, 57,000 ft. 6 to 24-in., etc.	L. Whitley, Chrmn. Bd.
Ia.	Carroll	8 p.m., Mar. 31	Sewers, 15,000 ft. 8-in., &c.	A. C. Dougherty, C. Clk.
Wis.	Waukesha	Mar. 31	Vit. pipe, 800 ft. 10-in.	M. P. Butler, C. Engr.
Conn.	Bridgeport	8 p.m., Mar. 31	Sewers on several streets	Bernard Keating, Secy. Com.
S. D.	Sioux Falls	9 a.m., Mar. 31	Lateral sanitary sewers	W. C. Leyse, C. Aud.
Pa.	Erie	8.15 p.m., March 31	Pipe sewers, several streets	City Clk.
N. J.	Paterson	April 1	Sewers and house connections, 1,943 ft.	T. S. Standeven, Clk.
Pa.	Scranton	Apr. 1	Disposal plant at Hillside Home	W. Matthews, Pres.
O.	Gallion	Apr. 1	Sewer, 44,000 ft. 4 to 18-in.	A. O. Theobald, C. Engr.
Ia.	Burlington	4 p.m., Apr. 2	Sewer pipe for year	Robt. Kroppach, C. Clk.
N. Y.	Brooklyn	11 a.m., Apr. 2	Concrete sewer, 15 ft. diameter, &c.	A. E. Steers, Boro. Pres.
N. Y.	Schenectady	2.30 p.m., Apr. 2	Sewers, 30,000 lin. ft.	F. E. Johnson, Secy. Bd. C.&S.
Md.	Baltimore	April 2	Rectangular masonry drains, circular drains, c-i. pipe and terra cotta	Bd. of Awards.
N. D.	Valley City	April 4	Main sewer system	M. J. Boyd, City Auditor.
Fla.	Arcadia	Apr. 6	Sanitary sewer system	Guy Hayward, City Clk.
Mich.	Iron Mountain	9 a.m., Apr. 12	Reinforced concrete pipe, 1,650 ft. 48-in., &c.	S. Beauparlant, C. Clk.
N. J.	Newark	April 15	Section 11, Passaic sewer; 6,500 ft. 10-ft. concrete	Passaic Valley Sewerage Cmrs
N. J.	Audubon	8 p.m., Apr. 21	Vit. pipe, 66,000 ft. disposal works	G. L. Brown, Mayor
WATER SUPPLY				
Wis.	Oconomowoc	4 p.m., Mar. 29	Excavations, c-i. pipe, bulkheads, &c.	C. H. Scoenike, Secy. Bd. P.W.
N. Y.	Sharon Springs	5 p.m., March 29	Sprinkling filters and settling tanks	Sewer Comrs.
Kan.	Bennington	7.30 p.m., Mar. 31	Water works	F. O. Reinhardt, Clk.
Quebec	E. Drummondville	April 1	Reservoir standpipe, etc.	A. Moisant, Secy.
Kan.	Turon	Apr. 1	Waterworks and lighting plant	Town Clerk
N. Y.	Winfield	1 p.m., Apr. 1	C-i. pipe, 21,000 ft. 4 to 10-in.; pump house stand pipe, &c.	A. C. Hackley, Vil. Clk.; W. G. Stone & Son, Engrs., Utica.
Okla.	Hinton	About Apr. 1	Water works and lighting plant	Benham Engr. Co., Okla. City.
Ky.	Madisonville	Apr. 2	C-i. pipe, steel tank, sewers	W. J. Dulin, Sec. Bd. P. Wks.
N. S.	Halifax	Noon, Apr. 2	Concrete reservoir & gate house	J. J. Hopewell, C. Clk.
N. J.	Vetnor City	8 p.m., Apr. 2	C-i. pipe, 780 ft. 12-in.; 200-H.P. boiler	E. S. Royal, C. Clk.
Hayti	Port au Prince	Apr. 3	Water works, cost \$400,000	Dept. Travaux Publiques.
Ont.	Brighton	April 7	Steel pipe, 33,000 ft. 6 and 10-in., etc.	R. J. Ross, Reeve.
N. Y.	Walden	8 p.m., Apr. 8	Steel stand pipe	S. Abrams, Pres. W. Comrs.
N. Y.	New York	11 a.m., Apr. 8	Bronze riser valves and appurtenances	J. P. Morrissey, Secy.
Sask.	Regina	noon, April 9	C-i. pipe, 125,000 lin. ft. 6 to 24-in., lead, valves, brass goods, etc.	J. M. Mackay, Supt.
Ind.	Evansville	Apr. 14	Water tube boiler & stokers	Waterworks Trustees.
N. J.	Jersey City	Apr. 15	Steel concrete conduit, cost \$500,000	C. A. Van Kuren, C. Engr.
Sask.	N. Battleford	8 p.m., Apr. 15	C-i. and steel water mains, hydrants, &c.	D. S. Walker, Mayor.
Mo.	St. Louis	Noon, Apr. 18	Intake tower, tunnel & screen chamber. Cost, \$450,000.	
			Filter equipment, \$375,000. Filters, \$375,000.	E. F. Wall, Water Comr.
Ill.	Springfield	2 p.m., Apr. 21	Pumping station filter plant, dam, reservoir, &c.	F. D. Whipp, Superv.
Wis.	Milwaukee	10.30 a.m., Apr. 24	Concrete or brick intake tunnel, 4,000 ft., 12-ft. diameter	F. G. Simmons, Comr. P. Wks.
LIGHTING AND POWER				
Cal.	Los Angeles	March 31	Ornamental lighting system	H. B. Ferris, Secy.
Ohio	Cleveland	April 1	Surface condensers	W. J. Springborn, Dir.
N. J.	Atlantic City	2.30 p.m., Apr. 3	Ornamental standards & 300 gas arc lamps, etc. Main-taining same for 5 years.	W. H. Bartlett, Dir. P. Safety.
Neb.	Beaver City	Noon, Apr. 4	Electric light plant	Mayor.
B. C.	Vernon	3 p.m., April 11	Diesel engine and generator	D. G. Tate, City Clk.
Sask.	Swift Current	April 14	Electrical machinery	G. D. Mackie, Twn. Engr.
New Mex.	Ft. Bayard	6 p.m., Apr. 14	Three transformers and one motor	Quartermaster.
La.	New Orleans	3 p.m., Apr. 18	One 150 h-p. motor, contract 54-D	F. S. Shields, Sec. S. & Wtr. Bd.
Sask.	Regina	April 30	Synchronous motor generator or converter set	E. W. Bull, Supt.
Chile	Santiago	Sept. 10	Illuminating plant for port works	Comision de Puertos.
FIRE EQUIPMENT				
N. Y.	New York	10.30 a.m., Mar. 31	Extending fire alarm telegraph system	Joseph Johnson, Comr.
Mont.	Helena	8 p.m., Apr. 7	One combination motor hose wagon	J. A. Mattson, City Clk.
Minn.	St. Paul	2 p.m., Apr. 7	Hose, 1,500 ft. 3/4-in.	G. T. Reddington, Secy. Pk. C.
Sask.	Saskatoon	Apr. 15	Two motor pumping engines	F. B. Harrison, Chr. Comrs.
BRIDGES				
Tex.	Houston	Mar. 31	Reinforced concrete bridge	D. C. Smith, Jr., City Secy.
R. I.	Providence	2.15 p.m., Mar. 31	Miscellaneous bridge work	J. H. Gainer, Mayor.
S. D.	Selby	April 1	Bridges during 1913	D. A. Taylor, Co. Aud.
Ont.	Elmvra	noon, April 4	Five concrete bridges	J. Nigh, Reeve.
O.	Cincinnati	Apr. 4	Concrete bridges at Madeira and Springfield	Co. Comrs.
N. J.	N. Brunswick	2.30 p.m., Apr. 7	Reinforced concrete bridge	P. H. S. Hendricks, Dir.
N. Y.	Schenectady	2.30 p.m., Apr. 9	Reconstrn. bridge	F. E. Johnson, Secy. Bd.
O.	Hamilton	10 a.m., Apr. 9	Bridge over Miami and canal	W. W. Crawford, Co. Aud.
Ohio	Columbus	April 11	Miscellaneous bridge work	F. M. Sayre, Co. Aud.
Kan.	Manhattan	Noon, Apr. 11	Number of bridges	G. H. Hungerford, Co. Clk.
Va.	Richmond	Noon, Apr. 15	Concrete bridge and viaduct approaches	C. E. Bolling, City Engr.
N. Y.	Minetto	About Apr. 15	Reinforced concrete bridge	Concrete Steel Engr. Co., N. Y.
Tex.	San Angelo	Apr. 15	Reinforced concrete bridge	J. B. Keating, Co. Clk.
Kan.	Leavenworth	Noon, Apr. 17	Repairing culvert	J. A. Hall, Co. Clk.
MISCELLANEOUS				
Ind.	Mishawaka	Mar. 31	Collecting and disposing of garbage	Board of Public Works.
Ind.	Richmond	11 a.m., Mar. 31	Steam or gasoline road roller	L. S. Bowman, Aud.
Ind.	Mishawaka	Mar. 31	Scales, 10, 12 & 15 tons	C. Clk.
Ill.	Joliet	7.30 p.m., Mar. 31	Chief's automobile	M. Berscheid, C. Clk.
Minn.	St. Paul	11 a.m., Mar. 31	Automobile	M. P. Keller, Mayor.

## BIDS ASKED FOR

STATE	CITY	REC'D UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
N. D.	Bismarck	8 p.m., Mar. 31	Sprinkling streets	R. H. Thistlethwaite, C. Aud.
Ont.	Port Arthur	5 pm., March 31	Rails, wire, etc., for street railway	J. J. Hackney, Comr.
Ga.	Savannah	March 31	Road Building machinery	A. B. Moore, Chrmn. Comm.
Ohio	Kenton	March 31	Court house; cost, \$275,000	E. G. Carey, Co. Aud.
O.	Lorain	Noon, Mar. 31	Timber bulkhead dock; cost, \$5,000	L. B. Johnston, Clk.
Ont.	Toronto	Apr. 1	Materials for street railway	H. C. Hocken, Mayor.
N. Y.	New York	Noon, Apr. 2	Sprinkling made land	Calvin Thompson, Comr.
Pa.	Harrisburg	10 a.m., Apr. 2	Machinery, implements & tools for maintenance of highways	E. M. Bigelow, Comr.
N. Y.	New York	Apr. 2	Shelter building, sewage disposal plant, etc.	Kalisades Park Comm.
N. J.	Camden	8 p.m., Apr. 2	Collecting garbage	R. J. Shelhamer, Chrmn. Com.
Argentina	Rosario	Apr. 3	Refuse destructors	No. 10560 Bureau Mfgs., Washington, D. C.
N. Y.	New York	3 p.m., Apr. 3	Draining salt meadow lands	C. B. Stober, Pres. Parks.
Mo.	St. Louis	Apr. 4	Reducing garbage for term ending 1918	Ed. Pub. Imp.
N. J.	Newark	3.30 p.m., Apr. 7	One or more motor comb. patrol wagons	John Baader, Pres. Com.
S. D.	Ashley	2 p.m., Apr. 7	Metal culverts	G. F. George, Co. Aud.
Ark.	Ashdown	Apr. 8	Concrete jail	W. M. Sykes, Chrmn. Comrs.
Ill.	Glenview	7 p.m., Apr. 8	Jail and village engine house	G. V. Appleyard, Clk.
Ala.	Jasper	Noon, Apr. 10	Jail building	J. W. Shepherd, Probate Judge
la.	Fairfield	1 p.m., Apr. 12	Jail and Sheriff's residence	W. Stewart, Chrmn.
N. Y.	Lockport	About May 1	Garbage disposal plant, cost \$8,000	J. F. Freshee, C. Engr.

## STREETS AND ROADS

**Albertville, Ala.**—Citizens will vote on March 31 on bond issue for good roads.

**Cottonwood, Cal.**—Cottonwood wants a wagon road connection with Harrison Gulch or Knox and also with Bee Gum-Red Bluff Road to Knob. There is road westward from Cottonwood to Gas Point, 20 miles. Cottonwood asks that this road be extended 16 miles up Middle Fork to intersection with Bee Gum-Harrison Gulch Road. Piece of road would cost about \$1,000 a mile.

**Los Angeles, Cal.**—More than \$1,000,000 in bonds of state highway are being purchased by banks of Southern California, who are giving great aid to construction of highway, according to state highway commissioner. Amount subscribed for these bonds by southern banks is sufficient to construct highway from San Diego to Santa Barbara.

**Los Angeles, Cal.**—Petitions have been received for various street improvements.

**Oakland, Cal.**—City Council has approved of plans for improvements of portion of southern half of Boehmer st., between Park av and Park st.; of 13th st., between Market and Clay sts., and 38th ave., between Penniman ave. and Boulevard park, and 16th st., from Peralta st. westerly.

**Pasadena, Cal.**—Ordinances have been passed for improvement of various streets.

**Pasadena, Cal.**—North Raymond st., between Union and Holly sts., will be resurfaced with asphalt.

**Roseville, Cal.**—Trustees have passed ordinance calling election for April 15 to vote on issuing bonds of \$20,000 to build link of the State Highway through Roseville, a distance of 1.88 miles.

**San Francisco, Cal.**—That San Francisco will soon be connected with peninsula by fine boulevard is assured from plans now prepared by State Highway Commission. This boulevard will be 40 feet wide.

**Stratford, Conn.**—Paving and improving various streets are being considered.

**Washington, D. C.**—Extensive street repairs calling for total expenditure of approximately \$100,000 have been ordered by engineer department of District of Columbia government. In all, 26 roadways are to be repaired or resurfaced.

**Jacksonville, Fla.**—Paving of several streets has been recommended by paving committee of City Council.

**St. Augustine, Fla.**—Ordinance for paving of Rohde ave. with shell has passed first reading.

**Atlanta, Ga.**—Work of grading and cherting East Lake boulevard, from Clifton station through to East Lake drive, is to be put under way at once.

**Edwardsville, Ill.**—Preliminary surveys have been begun by A. H. Hunter of the Illinois State Highway Commission, under direction of highway commissioners of Edwardsville. Township, for three miles of hard road to be constructed this summer. A special tax levy has been voted to build twenty-two miles during next five years. This summer Troy road, south from Edwardsville, and St. Louis road, passing the Fair Grounds, will be improved. Improved

portions of highways will be 16 feet wide. Commissioners are considering three kinds of materials. One plan provides for brick center 8 feet wide, with 4 feet of bituminous macadam on each side. Another, provides for concrete center with macadam on each side, and third for plain bituminous macadam. Brick will cost not more than \$1.75 a square yard, and other two not more than \$1.25 a yard.

**Peoria, Ill.**—Various street improvements are being planned.

**Peoria, Ill.**—Board of local improvements has decided upon another paving district to include streets north of Court and west of Capitol. District will be known as Second and State district, and it is proposed to improve with brick pavement Second st. from Court to State, Third st. from Market to State, Margaret from Front to Third, Catherine from Second to Capitol, State from Second to Capitol. There are 22,866 sq. yds. of pavement in the district.

**Indianapolis, Ind.**—Board of Public Works has adopted plans for paving Fairground ave., from Central ave. to Coliseum ave. Estimated cost, based on wood block material, is \$26,068, of which it is estimated city's share for paving street and alley intersections would be \$8,647.

**Wishawaka, Ind.**—Main st. will be paved from Lake Shore Railway south to Eleventh street by order of Board of Public Works.

**Hurlington, Ia.**—Extensive street improvement work is planned for this year.

**Des Moines, Ia.**—Improvements of various streets have been authorized.

**Fort Scott, Kan.**—Paving of Broadway has been authorized at cost of \$20,000. Improvement provides for portion of Oak, Broadway, Sixth and Margrave sts., comprising some 18 blocks.

**Topeka, Kan.**—Resolutions have been adopted for improvement of various streets.

**Lexington, Ky.**—Ordinance has been passed directing Mayor to issue and sell bonds in sum of \$10,793.47 for improvement of Woodland ave.

**New Iberia, La.**—City Council has passed sidewalk-paving ordinance. One street across the Bayou Teche (Duperier ave.) comes under cement order. City engineer has been instructed to prepare specifications for twelve miles of cement sidewalks, and mayor authorized to advertise for bids.

**Shreveport, La.**—Police jury authorizes petitioning of State Highway Department for about \$8,000 for constructing permanent stretch of road 5½ miles long between Shreveport and Mansfield.

**Oyster Bay, L. I.**—Electors of town who will vote at biennial town election to be held on April 1 will have submitted before them seventeen propositions for appropriations totaling \$240,100, mainly for road improvements. Largest appropriation to be voted upon, No. 17, will call for \$45,000 for purpose of grading and macadamizing the Plainville-Central Park highway at Central Park.

**Baltimore, Md.**—Specifications have been approved by Board of Awards for three paving contracts aggregating \$125,000. Nine streets will be improved by Paving Commission under these contracts. Contracts call for vitrified brick, granite block and sheet asphalt, respectively. Streets to be paved are:

Contract No. 52.—McMeehan st., from Pennsylvania ave. to McCulloh; Preston st., from Jones' Falls to Valley st.; Guil-

ford ave., from Jones' Falls to Lanvale st., and Park ave., from Laurens st. to North ave.

Contract No. 53.—Hill st., from Sharp to Charles; Franklin st., from Guilford ave. to Calvert, and Sharp st., from Hill to Ostend.

Contract No. 54.—Mosher st., from Park ave. to Mount Royal, and Linden ave., from Biddle st. to Dolphin.

**Port Deposit, Md.**—Cecil County Commissioners have appropriated \$10,000 for graveling road from Battle Swamp to Port Deposit and \$10,000 for graveling road from Bayview to Calvert.

**Rockville, Md.**—County Commissioners have opened bids on work of constructing state-aid roads from Woodmont to Glen Echo, distance of over three miles, and from Cohasset along River road to District of Columbia line, distance of about three and one-third miles. Six bids were submitted on work of building Woodmont-Glen Echo road, and five on work of building Cohasset-District line road. Bids will be forwarded to state roads commission, and contracts will be awarded by commissioners upon recommendations of the commission.

It is understood that work of building Woodmont-Glen Echo road will be started just as soon as preliminary arrangements are completed. Cost will be about \$25,000. Of this amount \$12,500 will be raised by bond issue against Bethesda district, and \$12,500 will be paid by state roads commission. It is planned to begin the work in May. Cost of building Cohasset-District line road will be about \$29,000. Work of construction will probably not be started for several months.

**Gloucester, Mass.**—Improvement of Concord st. with crushed stone at cost of \$2,500 has been authorized.

**Lowell, Mass.**—Proposition to borrow \$15,000 for graveling streets is being considered.

**New Bedford, Mass.**—Widening of Sixth st., from Spring to Union, is being considered.

**Williamstown, Mass.**—Appropriation of \$4,000 has been made for extension of new permanent road on Water st. and Green River road.

**Duluth, Minn.**—It is estimated at office of the Board of Public Works that \$500,000 of street improvements will be finished in Duluth the coming season.

**Duluth, Minn.**—Ordinances have been adopted for improvement of various streets.

**Duluth, Minn.**—Paving of Minnesota av. in Park Point is being discussed.

**St. Paul, Minn.**—Creosoted wood blocks for Osceola and Pleasant aves. have been ordered by Board of Public Works. Frontage on Pleasant ave. is 5,540 ft. Estimated cost a front foot is \$5.71 for 3½-in. blocks. Frontage on Osceola ave. is 5,352 ft. Cost for blocks is estimated at \$5.40 and for sandstone at \$6.50.

**St. Paul, Minn.**—Paving Summit ave. from Dale to Lexington, with three and one-half inch creosoted wood blocks has been approved by Board of Public Works. City engineer will do the work. Blocks will be laid on five-inch concrete foundation. Cost is estimated at \$8.90 a front foot, but street is forty-eight feet wide. Total cost is estimated at \$95,200, including sewer, gas and water connections. Cost for connections is estimated as follows: Sewer connections, each lot, \$45.90; water, north side of the street, \$40 a lot; south side, \$70 a lot; gas, north side of the street, \$16 a lot; south side, \$9 a lot.



**St. Paul, Minn.**—Unanimous approval has been given Faribault roads bill providing for bond issue of \$15,000 to assist in construction of line passed in apportionment of Federal grant of \$10,000 for Minnesota valley route.

**St. Paul, Minn.**—Robert street widening has been unanimously passed by Board of Public Works. Case st. was also ordered paved but material was not selected.

**Springfield, Mo.**—Rock road, from Springfield to Joplin, is being discussed.

**Atlantic City, N. J.**—Ordinance for straightening line of Atlantic ave. into Ventnor ave., between Boston ave. and "circle" in Albany ave., has been introduced.

**Camden, N. J.**—Resolution has been adopted calling election April 22 for voting on \$100,000 bond issue for street improvements.

**Madison, N. J.**—Instead of acting upon its own initiative and authorizing expenditure of \$35,000 on borough's roads this year, Common Council has voted to hold special election and ask authorization of this expenditure by voters.

**Merchantville, N. J.**—Merchantville voters will decide on April 22 upon bonding borough for \$100,000 for extensive street improvements.

**Dover, N. J.**—Petition for improving Blackwell st. is being considered.

**Elizabeth, N. J.**—Plans are being made by Township Engineer Masher for road work to be done by township this spring. Most important jobs will be improvement of roads in business section.

**Haddon Heights, N. J.**—Ordinance providing for \$30,000 bond issue for street improvements has passed. Haddon Heights Borough Council and will be referred to people at special election.

**Long Branch, N. J.**—Indications favor brick boulevard for that part of Ocean avenue leading from Sea Bright drawbridge to railroad tracks, taking in business block of the borough. Approximate cost is \$25,000.

**Millville, N. J.**—At meeting of Council bonds will be issued for paving of fifteen squares of Millville streets.

**Passaic, N. J.**—Opening of Poplar st. between Krueger pl. and McKinley st. has been authorized.

**Perth Amboy, N. J.**—Several petitions for street improvements have been received and provisions have been made for number in western and northwestern sections of city at regular meeting of Council.

**Rahway, N. J.**—Ordinance for paving of Irving st., from Poplar st. to Grand st., with vitrified brick or block, has been passed. City Engineer Marsh has been instructed to prepare necessary plans and specifications and advertise for bids.

**Auburn, N. Y.**—City Engineer E. C. Aldrich has been directed to prepare plans and specifications for pavement of thoroughfares designated with vitrified brick. Steps have also been taken toward pavement of James street with asphalt or vitrified brick. After hearing City Clerk was directed to advertise for bids on proposed work, giving figures on both materials.

**Batavia, N. Y.**—Village is contemplating paving of Summit st., requiring about 6,300 yds. of pavement. Specifications will be open and bids received on all types of pavements. Robert L. Fox, City Engineer.

**Brooklyn, N. Y.**—Borough President has received bids on twenty-six contracts for public work in borough, largest part of which is to be done in Long Island City district. Total of lowest bids was more than \$350,000, and 150 bids were received.

**Canastota, N. Y.**—At its annual charter election Canastota carried two paving propositions calling for more than a mile of new vitrified brick pavement.

**Ledyard, N. Y.**—Ledyard will spend \$5,200 to complete crushed stone road between Sherwood and Aurora village limits. Road is four miles long, and it is planned to finish it this year.

**Manhasset, L. I., N. Y.**—Town Superintendent of Highways O'Connor has been authorized to prepare plans and advertise for bids for construction of 5-foot sidewalk on Bayview ave., Port Washington.

**Newburgh, N. Y.**—Petition for improvement of Liberty st., from Broadway to South st. is being circulated.

**Niskayuna, N. Y.**—Residents will petition town for improvement of Van Antwerp rd.

**Oswego, N. Y.**—Corps of engineers from State Highway Department has started surveying for East Fourth st. pavement, which is part of \$150,000 Oswego-Fulton state highway to be constructed this year.

Engineers will complete work within a few days.

**Port Jervis, N. Y.**—Survey is being made for connecting State road through Port Jervis, to connect State road No. 283.

**Poughkeepsie, N. Y.**—Bond issue of \$7,000 has been carried for construction of highways.

**Rochester, N. Y.**—First ordinances have been introduced for following pavements: South Washington st., Medina block, \$3,600; Berkeley st., asphalt, \$5,600; Portland ave., asphalt, \$15,000; Marian st., brick, \$16,000; Bay st., brick, \$26,500; Tallinger alley asphalt, \$2,000; Hemstead alley, asphalt, \$2,000; Taylor st. widening, \$1,000.

**Rochester, N. Y.**—Considerable street improvements are being planned.

**Schenectady, N. Y.**—Ordinances have been adopted for improvement of various streets.

**Schenectady, N. Y.**—Bids received for paving of some 75,000 sq. yds. have been rejected and new bids will be received.

**Sennett, N. Y.**—Two expensive crushed stone roads will be built by town of Sennett. One from Grant ave. road near High Bridge to Soule Cemetery will cost \$1,200 and other on County Line road leading south, \$1,000.

**Sterling, N. Y.**—Numerous improvements will be made in Sterling. Appropriations include \$600 for road from Martinville east and south to county and town line, \$300 for road from Hunter's store to Sterling Center, \$300 for road from Swarthout Corners to Fair Haven, \$292.45 for making fill to straighten road at foot of Swarthout Hill, and \$200 for road from Peter Cooper's residence east to Sterling Valley.

**Goldsboro, N. C.**—Goldsboro Chamber of Commerce has passed resolution endorsing proposition to issue bonds for \$100,000 by Goldsboro township for purpose of providing good roads leading out of Goldsboro into county, and aiding adjoining townships to continue these roads to county line.

**Winston-Salem, N. C.**—Improvement of Elm st. has been authorized.

**Toledo, O.**—Councilman Ruppel has filed petition for paving Manhattan road from Cherry st. West Toledo, to New York ave., Manhattan. A tar macadam pavement is asked for and entire length of improvement will be 16,000 feet at cost of \$2.45 per foot.

**Akron, O.**—Ordinances have been adopted for improvement of various streets.

**Toledo, O.**—Resolution has been adopted for improving of Main st. from Starr ave. to Nevada st., and various other streets.

**Butler, Pa.**—Paving of Etna st. is being favorably considered.

**Chester, Pa.**—Select Council Bill No. 106 has been passed, providing for paving of various streets.

**Chester, Pa.**—Bills calling for over a score of additions to list of State highways as laid out in act of 1911 creating road system of Pennsylvania are before present legislature.

**McKeesport, Pa.**—Numerous street improvements have been authorized.

**Meadville, Pa.**—It has been decided to have City Solicitor prepare ordinance calling for special election on bond issue in sum of \$60,000, for paving and sewerage 12 of city streets.

**Pittsburgh, Pa.**—New bond issue of \$1,000,000 for building, repairing and maintenance of county roads has been authorized by County Commissioners.

**Sharon, Pa.**—Construction of new brick road between Youngstown and Sharon is contemplated.

**Williamsport, Pa.**—Highway between Lock Haven and Renovo will be constructed by State.

**Olneyville, R. I.**—Taxpayers will be asked to appropriate \$4,000 for building new macadam road on Atwood ave., from Plainfield st. to Central Pike.

**Camden, Tenn.**—Benton County citizens will shortly vote on \$200,000 bond issue for good roads.

**Greenville, Tenn.**—Road bond election for issuance of \$500,000 in bonds has been postponed thirty days until April 29.

**Sevierville, Tenn.**—Bids will be received by H. D. Bailey, Chr. County Court in Sevierville, Tenn., until April 5, 1913, at 12 m., noon, for purchase of \$185,000 bonds, issued for road improvements in said county.

**Bonham, Tex.**—City Council has ordered paving of 6th st. from Main to Center sts.

**Cameron, Tex.**—Commissioners' Court has ordered election April 18 in Justice Precinct No. 1 for people to vote upon

issuance of \$150,000 in bonds for purpose of building good roads in this precinct.

**Kyle, Tex.**—Commissioners' Court of county has ordered election for \$100,000 road bond issue for this commissioners' precinct. This election is to be held on April 11.

**Midland, Tex.**—Acting upon application signed by large number of citizens, commissioners' court has ordered election to be held April 23 to decide whether bonds should be issued for good roads.

**Terrell, Tex.**—City Commission of Terrell has ordered that work of paving Moore ave. and intersecting streets in this city begin on May 1.

**Leesburg, Va.**—Judge Edward S. Turner has issued order for election to be held at Round Hill, this county, April 23, on question of bonding town in sum of \$12,000 for purpose of improving and macadamizing the streets, and for the installment of a new system of water-works.

**Petersburg, Va.**—The public improvement committee of Council has recommended that Council authorize improvement of River st. at cost of \$57,000.

**Richmond, Va.**—Bond issue for permanent street improvements is under consideration.

**Seattle, Wash.**—Bids on contract for paving division 2 of Queen Anne blvd. have been opened by Board of Public Works. Contractors submitted proposals on job with amount of their bids as follows—Asphalt (a), Dolarway (b): D. H. Traphagan, (a) \$64,959.67, (b) \$52,290.15; McGuire & Moon, (a) \$63,819.30, (b) \$54,980.10; T. Ryan & Co., (a) \$65,206.97, (b) \$59,314.17; H. C. Mallott, (b) \$55,931.55; Ind. Asph. Pav. Co., (a) \$68,491.80, (b) \$68,491.80; P. J. McHugh, (a) \$62,008.92; Barber Asph. Paving Co., (a) \$63,440.95.

**Spokane, Wash.**—Improvement of Park Drive from 21st ave. to 25th ave. is under consideration.

**Walla Walla, Wash.**—Extensive street improvements have been planned.

**Walla Walla, Wash.**—City of Walla Walla will open bids April 1 for 10-year bond issue in amount of \$5,772.13. Bonds have been issued for improvement of North Rose and East Sumach sts.

**Milwaukee, Wis.**—Resolution providing for widening of Vliet st. seven feet, extending from Highland boulevard to the city limits, making it eighty feet wide, has been passed by streets and alleys committee of common council.

#### CONTRACTS AWARDED.

**Birmingham, Ala.**—For paving downtown section with wood block to Southern Wood Block Paving Co., as follows: 19th st., from First ave. to Third ave., \$13,354.90; Second ave., from 19th st. to 21st st., \$18,543.50; Morris ave., from 19th st. to 20th st., \$1,176.50; also to Southern Bitulithic Co.: Eighth ave., from 12th st. to 17th st., \$17,042.50, and to Southern Asphalt & Construction Co.: 24th st., from Eighth ave. to Twelfth ave., \$13,630; Beech st., from Highland to 14th st., \$2,542.50; Fourteenth ave., from Beech st. to 20th st., \$5,873.50; Ash st., from Fourteenth ave. to Highland ave., \$1,439.50; total, \$79,004.90.

**Tuscaloosa, Ala.**—By City to Southern Asphalt & Construction Co., Birmingham, Ala., to construct asphalt pavement.

**El Centro, Cal.**—To Barber Asphalt Paving Co., of Los Angeles, contract for construction of two miles of paved streets at \$100,000.

**Fullerton, Cal.**—To Fred Osborn, of Fresno, contract, at \$120,000, for paving of Whittier and Sparda rds. and Chapman and Commonwealth aves., work to be constructed under supervision of City Highway Commission and Chas. Flske, Jr., engineer. Work will require 50,000 cu. yds. of excavation, 1,007,900 sq. ft. of 5-in. asphalt concrete paving, 50,395 lin. ft. of shaping road bed, 100 lbs. steel rods, 90 cu. yds. concrete, 200 ft. 12-in. pipe, 40 ft. 20-in. pipe, 87 ft. 24-in. pipe, 90 ft. 36-in. pipe, 1,600 ft. guard rail.

**Los Angeles, Cal.**—For asphalt pavement on Vermont ave., from Sixth to Washington sts., to Fairchild-Gilmore-Wilton Co. Contract was awarded by Board of Public Works on bid of \$44,387.22.

**Los Angeles, Cal.**—By Board of Public Works for following improvements: Broadway (Wilmington), from First to Fourth—Awarded to B. C. Nichols at 18.5 cts. a sq. ft. for asphalt paving; 50 cts. a sq. ft. for granite curb gutters; 35 cts. a lin. ft. for cement block; 12 cts. a sq. ft. for sidewalks; \$4,900 for storm drains; aggregate, \$25,219.35. Council st., from Rosemont to Burtz—Awarded to J. Hein at \$7 a lin. ft. for grading and

graveling; 7 cts. a sq. ft. for regrading, grading and oiling; 35 cts. a lin. ft. for cement curb; 15 cts. a sq. ft. for concrete gutter; 35 cts. a sq. ft. for vitrified block gutter; 11 cts. a sq. ft. for sidewalk; aggregate, \$3,249.88. Eighth ave., from 21st to Washington—Awarded to John R. Ott Contracting Co., at \$1.85 a lin. ft. for grading and graveling; 32 cts. a lin. ft. for cement curb; 15 cts. a sq. ft. for cement gutter; 33 cts. a sq. ft. for vitrified block gutter; 12 cts. a sq. ft. for sidewalk; aggregate, \$1,331.70. Fifth ave., from Pico to north line of Country Club Terrace tract—Awarded to Barber Asphalt Paving Co., at 14 cts. a sq. ft. for asphalt paving; 31.9 cts. a sq. ft. for brick paving; 40 cts. a lin. ft. for cement curb; 17.4 cts. a sq. ft. for cement gutter; 31.9 cts. a sq. ft. for vitrified block gutter; \$276.50 for storm drain; aggregate, \$6,387.15. Fourth ave., from Pico to north line of Country Club Terrace Tract—Awarded to the Barber Asphalt Paving Co., at 14 cts. a sq. ft. for asphalt paving; 31.9 cts. a sq. ft. for vitrified block gutter; 17.4 cts. a sq. ft. for cement gutter; 31.9 cts. a sq. ft. for vitrified brick gutter; \$224 for storm drain; aggregate, \$6,064.95. Hawthorne ave., from 260 ft. east of Mormosa to 225 ft. west of Formosa—Awarded to O. A. Nichols at 12.4 cts. a sq. ft. for sidewalk; aggregate, \$337.53. Serrano ave., from Melrose to Torrence—Awarded to John R. Ott Contracting Co., at \$1.18 a lin. ft. for grading and graveling; 32 cts. a lin. ft. for cement curb; 14.5 cts. a sq. ft. for cement gutter; 35 cts. a sq. ft. for vitrified block gutter; 12 cts. a sq. ft. for sidewalk; aggregate, \$2,923.94. Vermont ave., from Sixth to Washington—Awarded to Fairchild-Gilmore-Wilton Co., at 17 cts. a sq. ft. for asphalt paving; 30 cts. a sq. ft. for brick paving; 35 cts. a lin. ft. for cement curb; 30 cts. a sq. ft. for vitrified block gutter; 45 cts. a sq. ft. for granite block gutter; 10 cts. a sq. ft. for sidewalk; \$450 for culverts; \$3,500 for storm drains; \$265 for catch basins; aggregate, \$44,387.22.

**Pasadena, Cal.**—By city for improvement of Raymond ave., to Fairchild-Gilmore-Wilton Co., at following bid: paving, per sq. ft., 15 9-10 cts.; gutter, per sq. ft., 13 1/2 cts.

**Pasadena, Cal.**—To J. E. Haddock, 357 N. Chester ave., contract for grading, curbing, guttering and construction of sidewalks on Kirkwood ave., at \$5,623; also Fairchild, Gilmore, Wilton Co., of Los Angeles, contract for paving with asphalt on Raymond ave., at \$4,044.

**Atlanta, Ga.**—By Park Commission contract to Sam E. Finley, Candler Bldg., Atlanta, Ga., for surface treating under Finley method about 30,000 surface square yards macadam roadway in Piedmont and Grant parks.

**Cedar Rapids, Ia.**—By City Council, contract for 40,000 sq. yds. brick paving at \$1.74 per sq. yd. and 8,500 cu. yds. grading at 49c. per cu. yd. to Ford Paving Co.

**Clinton, Ia.**—To Dolarway Paving Co., of Manhattan, contract for 27,800 sq. yds. Dolarway pavement in Clinton.

**Clinton, Ia.**—To Kaw Paving Co., of Topeka, Kan., contract for paving Second ave., from Second st. to Bluff blvd., with concrete with bituminous top coat; also for paving Elm st., from Second st. to Bluff blvd., with concrete with bituminous top coat.

**Washington, Ia.**—By city, for paving, to J. J. McKeone, of Washington, at total bid of \$22,915. Itemized bid as follows: 4,600 cu. yds., at 40c.; 7,500 lin. ft., at 65c.; 12,000 sq. yds., at \$1.35; totals of other bids: J. J. Ryan, Muscatine, Ia., \$23,237; McCarthy Improvement Co., Davenport, Ia., \$24,040; D. E. Keller Const. Co., Davenport, Ia., \$24,585; and Kaw Paving Co., Topeka, Kan., \$23,720. Chase P. Chase, Clinton, Ia., Consulting Engineer.

**Indianapolis, Ind.**—Bids have been opened by Board of Public Works for number of proposed street improvements. Low bids submitted were as follows: Ashland ave., from 13th to 14th sts., Republic Construction Co., asphalt, \$2.97 a lin. ft. on each side of the street; street intersections, \$485. Union Asphalt Construction Co., bituminous concrete, \$3.31 a lin. ft. and intersections, \$525. 28th st., from Sutherland ave. to Bellefontaine st., American Construction Co., asphalt, \$3.90 a lin. ft.; intersections, \$700, and bituminous concrete, \$3.55 a lin. ft. and intersections, \$650. Ashland ave., Republican Construction Co., asphalt, \$3.34 a lin. ft.; intersections, \$526; American Construction Co., bituminous concrete, \$3.05 a lin. ft., and intersections, \$700. Broadway, from 32d to 34th sts., Republic Construction Co., asphalt, \$3.05 a lin. ft. and intersections, \$494;

Union Asphalt Construction Co., bituminous concrete, \$3.15 a lin. ft. and intersections, \$450.

**Topeka, Kan.**—By City Comrs., contract for 50,000 sq. yds. of brick paving in Topeka to Richie Bros., of Topeka, at \$94.249.

**Baltimore, Md.**—By Board of Awards for paving included in contracts Nos. 47, 50 and 51 to F. E. Schneider Paving Co., Lorman and Monroe sts., P. Flanagan & Sons, 120 E. Lexington st., and Field, Barker & Co., of Philadelphia, Pa.; contract awarded to latter is for vitrified block paving, and aggregates \$23-137.75.

**Meridian, Miss.**—By Good Roads Commission, Lauderdale County, contract to Sam E. Finley, Candler Bldg., Atlanta, Ga., for treatment under Finley method of five miles of Causeyville road.

**Natchez, Miss.**—To J. N. Ball, of Monroe, Miss., and S. K. Jones, of Transylvania, La., subcontracts for improving Kingston and Liberty roads. P. W. Mulvihill, Sr., who secured contract for improving approximately 47 miles of public highways, will sublet other contracts, but major part of work will be done by his own forces.

**St. Joseph, Mo.**—Contracts have been entered into by Board of Public Works with Kelley Construction Company for paving with concrete Cherry st., between Dewey and Prospect aves. Board has also entered into contract with Metropolitan Paving Company for paving with brick Cedar st. from Fourth to Sixth.

**Bozeman, Mont.**—The Warren Construction Co., Journal Bldg., Portland, Ore., were lowest bidders for construction of cement curbs in Special Improvement District No. 57 and for pavement of Cleveland st.

**Brooklyn, N. Y.**—Bids have been opened at the office of Borough President Connolly of Queens for 19 highway improvements in the borough, lowest bids aggregating \$225,944.70. Most important undertaking is grading, curbing and repaving with improved granite blocks on sand foundation. Grand st. Newtown, from intersection with Flushing ave., Maspeth, to Long Island Railroad crossing, short distance west of the Village of Elmhurst, 7,720 ft., about one and a third miles. There were ten bidders on the job, H. J. Mullen the lowest. The amount of his bid is \$112,013. Lowest bidders on other contracts, amount of their bids and number of bidders are as follows: Laying concrete sidewalks in Flushing Village, on the north side Barclay st., from Bowne ave. to Parsons-Tuohy & Co., \$646; five bidders. Grading, curbing and laying sidewalks on Kelly ave., Woodside, from Woodside ave. to Anderson ave.—Cannon Engineering Co., \$9,120; ten bidders. Grading, curbing and laying sidewalks on Stockholm st., Ridgewood, from Brooklyn line to Onderdonk ave.—Harry Britton, \$3,876; five bidders. Laying cement sidewalks, 5 ft. wide, west side of Napier place, Richmond Hill, from Jamaica ave. to the Long Island Railroad—Harry Britton, \$850.50; nine bidders. Grading, curbing and laying sidewalks on East ave., Long Island City, from Ninth st. to Nott ave.—James Di Menna, \$2,374; eight bidders. Laying sidewalks on Ninth st., Long Island City, from Van Alst ave. to East ave.—Cornelius J. Murphy, \$810; nine bidders. Flagging, sidewalks and paving with asphalt blocks on a concrete foundation, Eleventh ave., Long Island City, from Broadway to Graham ave.—Barber Asphalt Paving Co., \$11,457; two bidders. Grading, curbing and laying sidewalks and paving with street asphalt on a concrete foundation Edsall ave., Ridgewood, from Anthon ave. to Onderdonk ave.—Borough Asphalt Co., \$5,907.50; three bidders. Grading Woodbine st., Glendale, from Fresh Pond road to Forest ave.—James T. Troisi, \$3,685.50; six bidders. Paving with asphalt blocks, on a concrete foundation, First ave., Long Island City, from Paynter ave. to Washington ave.—Barber Asphalt Paving Co., \$21,606; two bidders. To fill low land bounded by Van Alst ave., Third st., East ave. and Fourth st., Long Island City, and to build the necessary dry rubble retaining wall—F. J. Clancy, \$1,835; four bidders. Grading and laying cement sidewalks on Grand st., Maspeth, from the main line of the Long Island Railroad to Flushing ave., about 1 1/2 miles—Cornelius J. Murphy, \$11,792; thirteen bidders. Grading, curbing, laying sidewalks and crosswalks in Edison place, Glendale, from Central ave. to the southerly side of Copeland ave.—Hugh S. Blake \$2,450; four bidders. Grading, curbing and guttering Woodward ave., Ridgewood, from the Brooklyn Rapid Transit Co.'s railroad

crossing to Elm ave.—Charles A. Meyers, \$2,833.50; five bidders. Grading, curbing, laying sidewalks, crosswalks and drains in Hull ave., Maspeth, from Fisk ave. to Willow ave.—Callahan & Roulet, \$11,500.50; seven bidders. Grading and laying sidewalks and crosswalks, east side of Union place, Woodhaven, from Jamaica ave. to Tulip st.; also on the south side of Jamaica ave., from the Rockaway Division of the Long Island Railroad to Freedom ave.—Harry Britton, \$1,525.70; six bidders. Grading, curbing and laying sidewalks on north side of Polk ave., Corona, from Alburus ave. to Junction ave.—C. J. Murphy, \$2,549.50; six bidders. Paving with asphalt blocks, on a concrete foundation, Ninth ave., Long Island City, from Jackson ave. to Graham—Barber Asphalt Paving Co., \$19,113; two bidders.

**Rochester, N. Y.**—Lowest bid received for asphalt repairs is that of Rochester Vulcanite Pavement Company at \$1 per sq. yd. for 48,000 sq. yds.

**Syracuse, N. Y.**—Bids for resurfacing 21,000 square yards of asphalt pavement have been opened by Board of Contract and Supply. The Warner-Quinlan Company was low at \$1.03 a yard. Guy B. Dickson bid \$1.17 and John Young bid \$1.10. Frederick J. Baker was low on all bids for paving of North Franklin st. His bid for sandstone was \$14,102.30 and for vitrified brick \$10,570.30. Low bids on paving of Livingstone ave., from Euclid ave. to Clark st., were as follows: Vitrified block with stone curbs, John Young, \$5,348.75; asphalt with stone curbs, Warner-Quinlan Co., \$5,129.50; combined curb and gutter, vitrified brick, John Young, \$4,986.75; asphalt, \$4,956.75.

**Canton, O.**—By County Comrs., contract for 6,908 sq. yds. of block paving on Ely st. extension of the Harrisburgh Rd., Lexington Township, to John Wilson, of Alliance, at \$17.439.

**Deshler, O.**—For furnishing material and improving Elm st., from Vine to Ash st., by grading and paving with brick on concrete foundation, constructing curbs, sewers and catch basins from plans of Geo. Champe, Nasby Bldg., Toledo, to Withem & Holmes, Bldg., Deshler, at following bid: 3,929 cu. yds. grading, 30c.; 2,570 lin. ft. 10-in. pipe sewer, 40c.; 200 lin. ft. 8-in., 35 c.; 59 6x8-in. Y's, 60c.; 12 manholes, each, \$25; 19 catch basins, each, \$20; inlets, each, \$20; 5,073 lin. ft. stone curb, 45c.; 5,200 lin. ft. 4-in. drain tile, 5c.; 20 cu. yds. extra concrete, \$4; 7,872 sq. yds. deck-duty medial block, \$1.45; total, \$18,338. Totals of other bids on this class of block: H. S. Enck, Lima, \$20,911; Gluss Bros. & Co., Hamler, \$19,108; C. B. Hall & Son, Findlay, \$21,757; Manick & McLaren, New Castle, Ind., \$21,741; Ross & Morris, Frankfort, Ind., \$20,347; Ritz & Johnson, Napoleon, \$22,163.

**Lockland, O.**—To Kirchner Constr. Co., of Cincinnati, contract for paving of Wyoming ave., at \$60,000.

**Portland, Ore.**—By Street Com. of City Council, contract for paving of streets in Thompson St. Improvement Dist. of Rossmore, to Oregon Independent Paving Co., at \$103,344. Following street contracts have also been awarded: Grading sidewalks on Bryant st., to Manning & Co., at \$13,285; grading and walks on E. 44th st., to Joplin & Co., \$4,235; paving of E. 46th st., to Oregon-Hassam Paving Co., \$16,824.

**Bristol, Tenn.**—By Sullivan County Road Commission, contract to Oliver & Hill, of Knoxville, for construction of roads in Sullivan county to extent of \$200,000 under bond issue. This brings up the total bond issue for roads to \$500,000. Sullivan county's section of the Memphis-Bristol highway will be built out of this issue and Bristol-Kingsport road will be completed.

**El Paso, Tex.**—To Texas Bitulithic Co., of Dallas, of \$1.46 per square yard, for paving Mesa ave. from River to Blacker st.

**Galveston, Tex.**—To Magnolia Petroleum Co., contract for 80,000 gallons of road oil to be spread on Galveston's streets this year to eliminate dust. The cost is 4 1/2 c. a gallon, totaling, \$3,600.

**Galveston, Tex.**—Contract for paving Broadway with concrete from 14th st. to 24th st., has been awarded to Isaac Heffron at cost totaling \$70,372.56, on recommendation of Commissioner Austin. Contract for paving Broadway from 10th st. to 14th st. has also been awarded to same firm. This contract will total \$39,593.53.

**San Marcos, Tex.**—To C. W. Maxwell, contract to construct concrete street crossings around plaza at San Marcos.



## SEWERAGE

**Salt Lake City, Utah.**—To S. C. Larsen, to supply material and labor to install new California redwood sidewalk and flower bed edgings for county side of city and county building grounds  $4\frac{1}{2}$  cents per foot.

**Culpeper, Va.**—By State Roads Commission, contract to Virginia Construction Co., of Lynchburg, Va., at about \$55,000 to construct seven miles of macadam road on Thornton Gap and Rixeyville road.

**Lynchburg, Va.**—To Virginia Construction Co. for macadamizing of Rixeyville and Thornton Gap roads at about \$55,000.

**Richmond, Va.**—Following contracts have been awarded for granite spall paving: Cary st., from Allen ave. to the Boulevard, ten blocks; preliminary estimate, including grading and granite curbing, \$33,054.56; to John C. Cheatwood, at his bid of \$1.28 per square yard. Main st., from Rowland st. to the Boulevard, seven blocks; preliminary estimate, including curbing, \$13,200; to John C. Cheatwood, at his bid of \$1.29 per sq. yd., the Virginia Railway and Power Co. to pave between its tracks, and for two feet on either side. Leigh st., from Lombardy to Dineen st., four blocks; preliminary estimate, including grading, \$9,770.35; to John C. Weinbrunn at his bid of \$1.35 per sq. yd., the Virginia Railway and Power Co. to pave between its tracks and for two feet on either side. Fifth st., Fulton, from Louisiana to Nicholson, three blocks, to John C. Weinbrunn at his bid of \$1.35 per sq. yd. Nicholson st., Fulton, from Third to Fourth, to John C. Weinbrunn at \$1.35 per sq. yd. Clay st., from 17th to 18th st., to John C. Weinbrunn at \$1.35 per sq. yd. Duval st., from First to Brook ave., to J. C. Cheatwood at \$1.34 per sq. yd., the Richmond and Henrico Railway Co. to pave between its tracks and for two feet on either side. 29th st., from P st. to north side of Q, to J. C. Weinbrunn at his bid of \$1.35 per sq. yd. Contracts have been awarded for granite curbing as follows: North side of Leigh st., from Lombard to Dineen, to C. M. Weinbrunn at 85c. per lin. ft. North side of Main, from Robinson to the Boulevard, to C. M. Weinbrunn at 85c. per lin. ft. North side of Cary, from Allen ave. to the Boulevard, to C. M. Weinbrunn at 85c. per lin. ft. Contracts for asphalt block smooth paving, laid on sand cushion, have been awarded to the Washington Asphalt Block & Tile Co. at its bid of \$2.38 per sq. yd., for the following work: Marshall st., from Ninth to Tenth, preliminary estimate, \$3,520; Clay st., from 21st to Mosby st., beside Jefferson Park; Grace st., from Meadow to Allison, one block; Monument ave., from Allison st. to the grass plots west of Davis ave., including circle around Davis monument, two long, double blocks; Pine st., Broad to Franklin, two blocks; Grove ave., Addison to Davis, two blocks; Franklin, 28th to 29th, beside Marshall Park; Lombardy, Park ave. to Grove ave. Contracts for the Warren formula bitulithic paving have been awarded to the Atlantic Bitulithic Co. at its bid of \$2.20 per sq. yd., as follows: Randolph st., from Cary st. to entrance to cemeteries, ten blocks, preliminary estimate, \$25,000; 32d st., from Broad to Marshall. Mr. Folkes asked to be recorded as voting against the bitulithic award, and Mr. Hirschberg to be recorded as voting against the use of bitulithic for Randolph st. Contracts for grading have been awarded as follows: New Street Cleaning Department stable lot, to Clay & Steel, at 40c. per cu. yd. East and west side of 32d, from M to N st.; north and south sides of N st., from 31st to 33d; Leigh from Lombardy to Dineen; north and south sides of M st., from 32d to 33d, all to Clay & Steele, at 50c. per cu. yd. Chestnut st., Riverdale st., and three cross streets in tract of William Byrd Realty Corporation, to C. S. Luck, at 22c. per cu. yd.

**Richmond, Va.**—Superintendent of the Street Cleaning Department has been authorized to purchase four sanitary street flushing machines at \$1,000 each, from Charles Hvass & Co.

**Seattle, Wash.**—Lowest bid submitted for grading of Franklin ave. was that of Henry Brice, at \$14,290.25. Other bids as follows: R. M. Overstreet, \$18,365.75; H. L. Goerig, \$14,508; J. A. Zinkan, \$15,562.

**Columbus, Wis.**—To Weber Nelson Co., of Oconomowoc, contract for additional seven blocks of paving to be done at Columbus this coming summer. Work will cost about \$22,000.

**Huntsboro, Ala.**—Bond issue of \$14,000 has been authorized for construction of sanitary sewers and electric lighting plant.

**Oakland, Cal.**—Resolutions have been approved adopting plans and specifications for construction of sewer in portions of Baxter and Galindo sts., and for construction of sewer in portion of Custer st.

**Pasadena, Cal.**—City Council has passed resolutions for construction of sewers in various streets. John Beyer, Supt. of Streets.

**Waterbury, Conn.**—Board of Public Works considering petition by residents of Idylwood ave., Easton ave. and East Main st., from Idylwood ave. easterly for installation of sewers in those streets and for sidewalks.

**Statesboro, Ga.**—Fifty-four thousand dollars in Statesboro bonds have been sold to H. C. Speer & Sons Co. of Chicago. This amount was voted for sewerage system.

**Carlyle, Ill.**—Local Board of Improvements will in near future receive bids for separate system sewers, 6" to 24" V. C. P., 36,294 lin. ft., 38 manholes, 35 lampholes, 12 flush tanks. H. G. Weber has plans and specifications. F. A. Lietze, Civil Engineer.

**Burlington, Ia.**—As result of adoption of resolutions ordering three new sewers city of Burlington is to have addition of more than a mile to its sewerage system. Proposed resolutions adopted were those ordering construction of sewers and branches in Gnahn st., Garfield ave. and Harrison ave. Plans and specifications submitted to city engineer in relation to these jobs have been approved.

**Carroll, Ia.**—Council has ordered forty blocks of additional sewer and will at once advertise for bids.

**Biddeford, Me.**—Mayor J. G. C. Smith recommends construction of adequate sewerage system.

**Taunton, Mass.**—Sewer commissioners have voted to build sewer in Tremont st., from Granite st. toward Oakland. Construction this spring and summer will probably go as far as Fremont st.

**Saginaw, Mich.**—City Engineer H. H. Eymmer and his staff are preparing plans for construction of sewers to cost from \$40,000 to \$50,000.

**Eureka, Mont.**—At special meeting of Town Council A. L. Jaqueth, a civil engineer of Kalispell put before Council proposition for installation of sanitary and storm sewerage system, his proposition being to bond town for \$7,000 for main sewer and laterals. Question will be voted upon at municipal election on April 7.

**Hoboken, N. J.**—Installation of new sewer system has been authorized.

**Jersey City, N. J.**—Bill has been approved to spend about \$500,000 for building trunk sewer to carry sewage down Rockaway River Valley past intake of Jersey City waterworks at Boonton.

**Jersey City, N. J.**—Plans for new Mill Creek sewer, designed by Chief Engineer Charles Van Keuren to relieve Montgomery st., Mercer st. and Wayne st. sewers of heavy flow of rain water and sewage from the Bergen section, have been adopted by Street and Water Board and resolution has been adopted asking Board of Finance for \$71,000 to build the sewer.

**Newark, N. J.**—Plans and specifications for biggest storm water sewer ever projected or to be projected in East Orange have been filed with Board of Assessment Commissioners of that city by engineering department. Commissioners are required to prepare preliminary schedule of benefits and damages for submission to City Council. Cost is estimated at \$260,000 and line will be nearly four miles long.

**Albion, N. Y.**—Village of Albion will issue and sell its registered coupon bonds to amount of \$150,000 for construction of sewer system in village, together with sewage disposal plant or works.

**Cornwall, N. Y.**—Construction of sewer system estimated to cost \$230,000 is being considered.

**Schenectady, N. Y.**—Ordinances have been adopted for construction of sewers in various streets.

**Syracuse, N. Y.**—City Engineer Henry C. Allen will ask permission of State Board of Health to construct sewer to drain from northeast section of city into Ley Creek.

**Springfield, O.**—Recommendations for two new sewers have been adopted by

sewer committee of Council, and will be submitted to Council. Combined connecting sewer in Lowe st., to connect with sewer in Lagonda ave., and sewer in Florence st. were improvements also agreed upon.

**Eugene, Ore.**—Plans have been made for construction of complete sewerage system.

**Eric, Pa.**—Resolutions have been passed appropriating \$6,500 for stone drainage sewer in Fifth ward.

**Eric, Pa.**—Resolutions have been adopted directing city engineer to prepare specifications and to advertise for bids for construction of various sewers.

**Meadville, Pa.**—It has been decided to have City Solicitor prepare ordinance calling for special election on bond issue in sum of \$60,000, which money would be used in the sewerage and paving of 12 streets of the city.

**South Bethlehem, Pa.**—Council has decided to start proceedings condemning six acres of land near Lehigh River, on which it is proposed to erect \$100,000 sewage plant.

**Fall River, R. I.**—Committee on finance has recommended loan of \$60,000 for sewer construction work.

**Providence, R. I.**—Resolution has been adopted adding \$100,000 to sewer appropriation.

**Knoxville, Tenn.**—Commissioner John W. Flenniken will ask for appropriation of \$3,000 to enlarge storm sewer in Strong's alley, from Union ave. to Wall ave.

**Waco, Tex.**—Bonds in sum of \$20,000 have been sold for sewers.

**Norfolk, Va.**—Additional sewer work in Dunbar, Denhart, Cambridge and Bolton sts. and Gordon ave. has been recommended. Estimated cost, \$4,161.15.

**Warwood, W. Va.**—For street concrete crossing and curbs, to W. P. Daniels at \$1,680.20.

**Sumner, Wash.**—Resolution No. 8, authorizing construction of sewer system throughout most thickly settled district has been passed. Cost of construction will range between \$7,000 and \$10,000. Contract will be let about April 15.

**Niagara Falls, Ont.**—Plans have been approved for sale of bonds for construction of new trunk sewer along course of Muddy Run creek.

## CONTRACT AWARDED.

**Mobile, Ala.**—By City Commissioners, to G. A. Chamblin, of Mobile, at \$5,000, to construct sewer on Wilkinson and St. Louis sts.

**Washington, D. C.**—By Comrs. D. C. for constructing Sects. 2, 3, and 4 of the Anacostia main interceptor, to Warren F. Brenizer Co., of Washington, D. C., at following figures: Sect. 2: 2,000 cu. yds. ordinary excav., \$1.75; 400 cu. yds. concrete masonry "B," \$8; 30 cu. yds. vitr. brick masonry, \$22; 10 cu. yds. sewer brick masonry, \$14; 610 lin. ft. 6-in. sub-drain pipe, 30c.; total, \$7,683. Sect. 3: 15,500 cu. yds. ordinary excav., 89c.; 2,630 cu. yds. concrete masonry "B," \$7.75; 200 cu. yds. vitr. brick masonry, \$21; 45 cu. yds. sewer brick masonry, \$14; 4,000 lin. ft. 6-in. sub-drain pipe, 30c.; total, \$40,207. Sect. 4: 220 cu. yds. ordinary excav., 75c.; 40 cu. yds. concrete masonry, \$8; 5 cu. yds. vit. brick masonry, \$22; 5 cu. yds. sewer brick masonry, \$14; 2,075 lin. ft. tunnel rock, \$12; 2,075 lin. ft. concrete or 2,075 lin. ft. vitr. brick, \$6.25; total, \$38,534.

**Louisville, Ky.**—Sewer Engineer Roy W. Burks has completed figures in detail bids from nine contractors of forty-eight blocks of sewers to be awarded by Board of Public Works. The detail shows W. H. Kopelman with bid of \$54,300 was low on contracts 12, 13 and 15, while L. R. Figg, with bid of \$10,300 was low on contract 14. These bidders were decidedly the lowest and contracts will probably be awarded by board.

**Madison, Neb.**—By City Council, to Katz Constr. Co., of Omaha, contract for constructing sewer system, at \$15,880.

**Newark, N. J.**—By Passaic Valley Sewerage Commission, contract for construction of section 12, extending from point in Berlin and Jabez sts., through Hamburg pl. and Doremus ave., to Frawley-Kaufman Co., of New York. Contract was given out in two parts, both going to same concern, whose total bid was \$299,400, about half as much as highest bidder.

**White Plains, N. Y.**—Contract for construction of lateral sewers in Odell ave., Roosevelt ave. and Charles st., and for building of a main trunk sewer from Odell ave. to New York Post Road, has been awarded to David Richards for sum of \$3,255.

**Corvallis, Ore.**—For constructing sanitary sewer system to Colver, Shashky & Woelke, of Grants Pass, at \$17,662.

**Carlisle, Pa.**—For constructing sewage disposal plant and outfall sewer, portion of system of sewers and North Side drainage conduit, from plans of T. Chalkley Hatton, Wilmington, Del. Contract "A," construction of complete sewage disposal plant, including 2,000 ft. of 24-in. terra cotta effluent pipe, to S. P. Angle, Hagerstown, Md., \$28,467. Other bids as follows: W. H. & C. F. Thompson, Law Bldg., Baltimore, Md., \$60,000; Wm. Horn & Co., N. Y. City, \$45,450; G. W. Ensign, Camp Hill, \$49,600; engineer's estimate, \$35,527. Contract "B," successful bidder, J. Dick, Scottsdale, Pa., as follows: 500 lin. ft. 18-in. pipe sewer, up to 4 ft. deep, \$1.09; 2,000 lin. ft. 18-in., 4 to 6 ft., \$1.33; 830 lin. ft. 18-in., 6 to 8 ft., \$1.48; 100 lin. ft. 18-in., 12 to 16 ft., \$1.62; 2,100 lin. ft. 24-in., 4 ft. deep, \$1.30; 2,150 lin. ft. 24-in., 4 to 6 ft., \$1.52; 590 lin. ft. 24-in., 6 to 8 ft., \$1.82; 1 Y branch in 18-in. pipe, \$2.68; 1 Y branch in 24-in. pipe, \$4.65; 132 vt. ft. manholes, \$4; 26 manhole frames and covers, ea., \$18; 26 catch buckets, complete, ea., \$5.50; 150 cu. yds. rock excav., \$2.85; total, \$13,098. Totals of other bids: W. H. & C. F. Thompson, Law Bldg., Baltimore, Md., \$24,437; Wm. Horn & Co., N. Y. City, \$19,367; Bennett & Randall, Lebanon, \$14,849; H. C. Brooks, Martinsburg, W. Va., \$19,102; G. W. Ensign, Camp Hill, \$17,151; Lewis Jacques, Elizabeth, N. J., \$17,819; engineer's estimate, \$14,818. Contract "C," successful bidder, H. C. Brooks, Martinsburg, W. Va., as follows: Pipe sewers, 18-in., 300 line. ft. up to 4 ft. deep, \$1.30; 400 lin. ft. 18-in., 4 to 6 ft., \$1.40; 951 lin. ft. 18-in., 6 to 8 ft., \$1.60; 540 lin. ft. 18-in., 8 to 10 ft., \$1.80; 540 lin. ft. 18-in., 10 to 12 ft., \$2; 250 lin. ft. 18-in., 12 to 14 ft., \$2.30; 670 lin. ft. 15-in., 4 to 6 ft. deep, \$1.07; 690 lin. ft. 15-in., 6 to 8 ft., \$1.25; 470 lin. ft. 15-in., 8 to 10 ft., \$1.50; 190 lin. ft. 15-in., 10 to 12 ft., \$1.70; 250 lin. ft. 12-in., up to 4 ft. deep, 80 cts.; 150 lin. ft. 12-in., 4 to 6 ft., 85 cts.; 540 lin. ft. 12-in., 6 to 8 ft., \$1; 400 lin. ft. 12-in., 8 to 10 ft., \$1.15; 100 lin. ft. 10 to 12 ft., \$1.45; 270 lin. ft. 10-in., 4 to 6 ft. deep, 73 cts.; 2,340 lin. ft. 10-in., 6 to 8 ft., 88 cts.; 3,025 lin. ft. 10-in., 8 to 10 ft., \$1.05; 1,490 lin. ft. 10-in., 10 to 12 ft., \$1.40; 4,980 lin. ft. 8-in., 4 to 6 ft. deep, 62 cts.; 14,185 lin. ft. 8-in., 6 to 8 ft., 70 cts.; 2,815 lin. ft. 8-in., 8 to 10 ft., 85 cts.; 835 lin. ft. 8-in., 10 to 12 ft., \$1.25; Y branches: 160 in 18-in. pipe, \$1.45; 100 15-in., \$1.10; 72 12-in., 80 cts.; 338 10-in., 65 cts.; 1,100 8-in., 45 cts.; 935 vertical ft. of manholes, \$4.50; 100 manhole frames and covers, ea., \$12; 100 catch buckets, ea., \$5.75; 6,400 cu. yd. rock excav., \$2.50; 23 flush tank frames and covers, ea., \$12; 42 lampholes, complete, including frames and covers, ea., \$8; concrete drain: 660 lin. ft. 54-in., up to 6 ft. deep, \$5.50; 951 lin. ft. 54-in., 6 to 8 ft., \$6; 540 lin. ft. 54-in., 8 to 10 ft., \$6.75; 538 lin. ft. 54-in., 10 to 12 ft., \$7.75; 240 lin. ft. 54-in., 12 to 14 ft., \$9; 275 lin. ft. 14 to 16 ft., \$10.50; 3,204 lin. ft. 54-in. drain-conc. inv.-seg. block arch to be added, \$1.20; 650 lin. ft. 46-in. concrete drain, 6 to 10 ft. deep, \$5.50; 650 lin. ft. 46-in. drain concrete and vitr. block, 6 to 10 ft., \$6.60; 300 lin. ft. 44-in. concrete drain, 6 to 10 ft., \$5.25; 300 lin. ft. 44-in. drain, concrete and vitr. block, 6 to 10 ft., \$6.30; 250 lin. ft. 24-in. T. C. pipe, up to 6 ft. deep, \$1.75; 250 lin. ft. 12-in., 4 ft., 85 cts.; 160 lin. ft. 10-in., 4 ft., 75 cts.; 15 closed manhole frames and covers, ea., \$12; 5 corner inlets, complete, \$55; 15 side inlets, complete, ea., \$55; 3 grate inlets, complete, ea., \$37.50; total, \$87,170. Totals of other bids: W. H. & C. F. Thompson, Law Bldg., Baltimore, Md., \$102,345; Bennett & Randall, Lebanon, Pa., \$107,428; J. I. Dick, Scottsdale, Pa., \$123,999; Costa & Co., Orange, N. J., \$111,992.

**Erie, Pa.**—Awards have been made in joint sessions of councils for construction of 1,800 feet of 40-inch re-enforced concrete sewers in Dunn st. at east end of First ward northwardly to lake and for nine-inch sewer in Perry st. from Twenty-fifth st. southwardly 250 feet. The Dunn street sewer went to Contractor Ollie S. Riblet at \$3.30 a foot. Other contractors bidding were: E. G. Diefendorf at \$3.60; Willis Bancroft at \$3.78; McCormick & Bro., at \$3.95; and J. & M. Doyle at \$7. For vitrified pipe sewer, McCormick's bid \$3.90; Bancroft's \$4.28; and Doyle's \$4.50. Contractor Riblet asks \$35 for manholes, 30 cents for nine-inch pipe and 75 cents for 12 and 15-inch pipe. On Perry st. sewer, Clements Wolfram bid \$1.13 a foot for nine-inch pipe and work of laying, with 50 cents for six-inch pipe, \$1.15 for Y

or T branches, and \$40 for manholes. McCormick's bid was \$1.15 for pipe laying and same prices as Wolfram gave for other work.

**Galveston, Tex.**—For constructing 30-inch drain of vitrified brick on 25th st., from north to south side of Broadway, to A. C. Falligant, whose bid of \$673.50 was lowest of three received.

**Seattle, Wash.**—Lowest bid submitted for sewers on West 55th st. was that of Dahlstrom & Rodal, at \$58,196.60. Other bids as follows: Ward & Scherer, \$60,278.74; James Donofrio, \$62,301; McGuire & Moon, \$72,117.66; Ferguson-Colt Co., \$63,117.66.

**Edmonton, Alta.**—By city, contracts for trunk sewers, Contracts 3 to 8, have been awarded as follows, reinforced concrete blocks to be used: Contract 3 to D. M. Garry Co., 8-ft. sewer, \$53.35 per lin. ft.; 6-ft. 6-in., \$43; 4-ft., \$25.65; total, \$398,150. Contract 4 to Lyall Mitchell, 4-ft. sewer, \$24.25 per lin. ft.; total, \$177,931. Contract 5 to H. Ulen, 6-ft. sewer, \$36.90 per lin. ft.; 5-ft., \$29.90; 4-ft. 6-in., \$23.70; total, \$247,174. Contract 6 to Lyall Mitchell, 6-ft. sewer, \$36.50 per lin. ft.; 5-ft., \$30.50; 4-ft. 6-in., \$25.25; 4-ft., \$24.25; total, \$318,297. Contract 7 to Manders & Gregory, 4-ft. sewer, \$25.52 per lin. ft.; 5-ft., \$31.70; total, \$230,824. Contract 8 to H. C. Ulen, 6-ft. sewer, \$36.90 per lin. ft.; 5-ft., \$29.90; 4-ft., \$24.90; total, \$404,633.

## WATER SUPPLY

**Oxford, Ala.**—Bids have been asked for laying of water main on Gray st.

**Fowler, Colo.**—Bids will be opened in a few days for laying of pipe line between Olney and Ordway, which will supply latter place with Crystal Springs pure water.

**Pueblo, Colo.**—Two miles of new iron water main, to be laid with 12 and 8-in. pipe, is to be installed by North Side Water Works immediately, according to decision of Board of Trustees.

**Rome, Ga.**—Extensive improvements will be made in water works system of city of Rome. Bonds for this purpose were voted two years ago, and work will be done during coming summer.

**Manly, Ia.**—Bond issue of \$9,000 will be voted on for installation of water works system.

**Gloucester, Mass.**—Order has been passed authorizing loan of \$30,000 for use of water department.

**Livingston, Mont.**—Plans and specifications for new water works system and pumping plant have been accepted by City Council. Election to decide if bond issue of \$225,000 will be held April 1.

**Whitehall, Mont.**—Citizens will vote on question of installation of water works system.

**Fort Plain, N. Y.**—Appropriation of \$12,000 has been made to put two new pipe lines beneath river connecting with water system.

**Madison, N. Y.**—Taxpayers have voted in favor of \$14,635 bond issue for construction of waterworks, with reservoir, pipe lines, etc.

**Schenectady, N. Y.**—Ordinances have been adopted for improvements of waterworks.

**Walden, N. Y.**—Board of Water Commissioners will advertise immediately for bids for construction of new stand pipe.

**Durham, N. C.**—G. C. White, expert engineer who was employed by city to make investigation of cost of owning and operating waterworks plant for city has made his report to Board of Aldermen. He reported that to erect new plant on Flat River would cost \$331,250, and that expense of operating it would be between \$20,000 and \$25,000. Cost of making improvements to present Durham Water Co. plant on Eno River would amount to \$258,570, and cost of operating it per year would be matter of \$30,733.15. City aldermen are well pleased with report, and bond election for \$500,000 bonds will be had in near future.

**Oklahoma City, Okla.**—Bond issue of \$100,000 for extension of water works system is being considered.

**Salem, Ore.**—Municipal water works system is being considered.

**Hurley, S. D.**—City Council has adopted plans for extension of municipal system of waterworks. Work will commence in near future.

**Volin, S. D.**—Town Board has been given necessary authority to bond town for sufficient sum to install municipal system of waterworks. Work of installing system shortly will commence.

**Willow Lakes, S. D.**—Citizens have voted in favor of installing water works system.

**Knoxville, Tenn.**—Among improvements that Commissioner Geo. P. McTeer will ask permission to make at water plant will be to increase capacity of filtration plant.

**Tiptonville, Tenn.**—An engineer, representing R. C. Houston and Co., of Memphis, has been making surveys for installation of waterworks system in this town.

**Fort Worth, Tex.**—City Commissioners have adopted order calling \$300,000 reservoir bond election.

**Hyrum, Utah.**—Installation of waterworks system has been authorized.

**Leesburg, Va.**—Election will be held April 23 at Round Hill for bonding town in sum of \$12,000 for installment of new system of waterworks and improving and macadamizing of streets.

**Omak, Wash.**—Bond issue of \$8,600 has been voted for installing waterworks system.

**Seattle, Wash.**—Resolutions have been adopted for construction of water mains on large number of streets.

**Wittenberg, Wis.**—Water works system, at cost of \$33,600, will be installed.

## CONTRACTS AWARDED.

**Mishawaka, Ind.**—To G. Frank Stoeckinger contract for laying pipe and connecting up pure water wells to new water station in East Mishawaka. His bid lowest and best, was \$3,380.

**Redfield, Ia.**—To Des Moines Bridge & Iron Co., of Des Moines, contract for constructing waterworks, at \$9,480.

**Glen Elder, Kan.**—To Des Moines Bridge & Iron Co., Des Moines, Ia., for installation of water works system.

**Baltimore, Md.**—By Bd. of Awards, to Coffin Valve Co., Neponset, Boston, Mass., contract for 48-in. gate valve for new dam, at \$1,620.

**Boston, Mass.**—To Kennedy Valve Mfg. Co., Elmira, N. Y., contract for furnishing gate valves.

**Medford, Mass.**—For furnishing 225 tons of cast iron pipe to R. D. Wood Co., Philadelphia, Pa.

**Minneapolis, Minn.**—To East Jersey Pipe Co., for about 15,000 ft. of 54-in. steel pipe, at its bid of \$116,700.

**Buffalo, N. Y.**—By Commissioner of Public Works, to Bison Construction Co., for building of Venturi Meter & Valve house at new pumping station. Cost will be \$155,152.

**Medina, N. Y.**—Lowest bid received for construction of Medina arch aqueduct and general improvement, known as Contract No. 65, is that of Borrally & Ingersoll, Rochester, at \$1,030,000. Other bids as follows: Kennedy & Hamilton, Utica, \$1,293,000; McArthur Bros. & Co., New York, \$1,200,000; Oscar Daniels & Co., New York, \$1,166,000; H. S. Kerbaugh, Inc., New York, \$1,200,000; Maryland Dredging Co., Baltimore, \$1,096,000; Falk & Mengies Co., Buffalo, \$1,080,000; Ira M. Ludington Sons, Inc., Rochester, \$1,100,000; T. A. Gillespie Co., New York, \$1,100,000; Buffalo Dredging Co., Buffalo, \$1,120,000; Frazer, Brace & Co., New York, \$1,200,000.

**Springfield, O.**—To Allis-Chalmers Co., of Milwaukee, contract for furnishing new 12,500-gallon pump for waterworks department, by Board of Control. Price of new pump will be \$57,000, which was the second lowest bid submitted.

**Texhoma, Okla.**—By city contract to Bash & Gray, Joplin, Mo., at \$20,066 to construct waterworks.

**Richmond, Va.**—Contracts have been awarded by Administrative Board for supplies for Water Department for year, as follows: For pig lead, to Hunter B. Frischkorn, at \$4.64 per hundred pounds. For ten special hydrants and thirty Richmond fire hydrants, to Smith Courtney Co., at \$37.50 and \$30 each. Lead pipe, to Haines, Jones & Cadbury Co., at \$5.40 per hundred pounds. Wiping solder, to Sydnor Pump & Well Co., at \$21.60 per hundred pounds. Valve and meter boxes, to O. G. McGee & Son, at \$5.50 and \$1.48 each. Lathe contract, to Smith-Courtney Co., at \$783.07. By-pass valve, to H. L. Whitlock, at \$230. Contract for thirty-six by eight-inch sleeve valve, to Water Works Equipment Corporation, at \$80. Contract for general hauling, to W. E. Carter, at 93 cts. per ton of 2,000 pounds. Contract for aluminum sulphate for settling basin, to Harrison Bros., Inc., at \$1.06 for 17 per cent. alum, and \$1.39 for 22 per cent. alum.

**Seattle, Wash.**—Lowest bid submitted for water main in W. 63d st. was that of Nelson & Carlson, at \$1,606.90.